THE

NORTH AMERICAN

Medical and Surgical Journal.

APRIL 1829.

Original Communications.

ARTICLE I.—*An Address introductory to a Course of Lectures on the Institutes of Medicine and Medical Jurisprudence. By* JOHN BELL, M.D.*

IN the scheme of instruction in the PHILADELPHIA MEDICAL INSTITUTE, my department is the Institutes of Medicine and Medical Jurisprudence.

Under the first head are comprised *physiology*, *hygieine*, and *pathology*, to which many have added *therapeutics;* but this is a latitude of interpretation which I do not conceive necessary on the present occasion, although I shall take the privilege of making frequent therapeutical application of physiological and pathological principles.

The usual import of the term institutes, signifying the principles and fixed laws in legislation or science, is asked for on the present occasion in reference to medicine, however rash or presumptuous we

* This address was first delivered in April 1825.

may thereby appear to the sceptic and the mathematical philosopher. We must, indeed, be prepared at the very outset to encounter all the false reasonings, misplaced pleasantries, and heartless sneers, which, from a remote period to the present day, from Pliny to Moliere and Rousseau, have been adduced against the certainty and utility of medicine. For this negation once proved, it would be an ungracious, as well as hopeless and useless task, to speak of medical institutes or principles.

But prior to any attempt at defending ourselves from unjust and illiberal attacks, by setting forth the strength and variety of our resources, we will entreat our assailants to grant a truce, while we glance around and inquire into the pretensions of the advocates of other intellectual pursuits, to certainty of rules and uniformity of results.

We shall pass over, without summoning to our aid the melancholy truth, that every thing of which human nature attempts to take cognizance, is but dimly seen, and imperfectly understood. We would rather first listen to the astronomer's triumphant exclamation, when he points to the starry heavens, and revolving suns, and worlds innumerable. Behold, says he, the power of the deity, and at the same time the evidence of man's persevering and successful inquiries: the revolutions of the several planets, the orbits of yonder moon, as well as of this earth which we inhabit, and all their countervailing forces, laid down with a calculating precision, a mathematical accuracy, which leaves no room for doubt: eclipses foretold; change of seasons, and succession of day and night, the rise and fall of the waters of the ocean, all made clear to every, the meanest capacity.

Let us, in reply, be permitted to allude to the lapse of ages, ere such a monument of intellectual prowess could be raised; and in the mean time how many centuries of vain gazing at the heavens indulged in by the astronomers of Chaldea and Egypt! how many absurd hypotheses from Ptolemy to Tycho Brahe! how few useful additions from the time of Thales and Hipparchus down to that of Copernicus and Galileo, embracing a period of nearly two thousand years! How recently have method and rigorous calculation been introduced by a Kepler* and a Newton. But a century has

* We may form some idea of the state of astronomical science anterior to the

elapsed since the illustrious Englishman closed his truly brilliant career. Of his successors in the path of discovery, and expounding the secrets of the heavens, Euler, La Grange, and La Place; the two latter may be regarded as our contemporaries. From the earliest epoch, beyond historical record itself, astronomy has been a favourite pursuit; and yet it is only within the last half century that by its aid the navigator can fearlessly sail from shore to shore, and calculate, with tolerable accuracy, his situation and distance from land; and after all, the determining the longitude is a problem but partially solved. In fine, we must not forget, that notwithstanding all the boast of geometrical and analytical demonstration, some of the calculations most abounding in successful results have been formed on the Newtonian *theory* of gravity, on the assumption of a fact, without a knowledge of its nature or cause. Much yet remains unknown, and sincerely as we congratulate astronomers for what *has* been accomplished in their science, we cannot forget the thousands of years during which it was nearly stationary, and astrology, worse than ignorance, reigned paramount.

If next we look to chemistry as one of the exact sciences, and ask its votaries what are their pretensions for triumphing over us, we shall be promptly told, that nothing is by them admitted but what can be demonstrated by experiment; that the composition of bodies is ascertained by analysis, and their elements displayed to the senses; consequently every fallacy is avoided. But it is not a sufficient claim to the elevation of any study to the dignity of a science, that a great number of facts are rendered evident, and experiments made and recorded; without these be of sufficient moment, and possess such a co-ordination and regular sequence, as that we can deduce therefrom positive principles and maxims—institutes, if you will—which, taken from the known, shall be applied to and explain the mysteries of the unknown. If deductions, thus made, are of certain and invariable application, they constitute an exact science; but if they admit of many, I may say any, exceptions, they merely form a

---

time of Kepler, who died about the middle of the seventeenth century, from the language held by that wonderful genius:—"It has pleased the Lord," said he, "to wait five thousand years for an astronomer like myself, and I can therefore well afford to wait a few hundred for proselytes to my doctrine: but eventually they must come."

theory. Now, barely alluding to the long series of ages, from Aristotle to Paracelsus, when the four elements were received as demonstrated, as a truth which could not be doubted, and hastily glancing at the centuries of alchemical absurdities, we willingly come down to the present brilliant era of chemistry. We will admit the variety and number of the facts disclosed by this study, and the value, nay, glory of their application to the wants of life, to the abridging labour, and ornamenting and embellishing all the works of man. If, however, we ask for the fixed principles of chemistry, we fear the reply will not be very satisfactory. We shall be told of elements to day, which will be proved compounds to-morrow; we shall find laid down rules for explaining the various changes in bodies, to which are exceptions in the very one chosen for illustration. This year we have one supporter of combustion, the next gives us several; nor can we see any evidence of fixity in a science, the nomenclature of which is undergoing such repeated alterations. We all know the singular spectacle presented to the scientific world, of the then two most celebrated chemists of Great Britain, at direct variance of opinion, respecting what is now called chlorine; the one in London affirming that it was a simple, the other in Edinburgh equally confident that it was a compound substance; and each explaining on his own theory, with plausibility and seeming correctness, all the phenomena produced by its combinations with other bodies. Respecting galvanism and electricity, the explanations are, for the most part, hypothetical. Even where analysis is used to determine the composition of bodies, it is most usually destructive, and cannot receive the support of subsequent synthesis. Chemistry ought not then to be called with propriety an exact science. It is as yet but approximative, partly demonstrative and partly conjectural. But let no one rashly venture to criticise chemists for frequent changes, and convert that into a pretext for censure, which is the strongest claim to our admiration of men, whose untiring zeal is ever prompting them to catechise nature, and render her oracles clear and satisfactory.

We will next concede our admiration to the laborious and minute observations, the travels and researches of the students of mineralogy and geology, without, by any means, admitting their pretensions as cultivators of an exact science. Facts they have in abundance, such as the chemical composition and geometrical form

or crystallization of many minerals; but definite arrangement does not exist: we wait, perhaps in vain, to see the conflicting theories of Werner, Hauy, and Berzelius, in mineralogy, reconciled and moulded into a doctrine or code, harmonious in all its parts, and which shall guide the inquiries of the tyro, and obviate the doubts and objections of the teacher. It is with a peculiarly ill grace (and yet it is done), that the geologist can venture to reproach the physician with the uncertainty of his profession, or the opposite theories which have been held and taught in our schools. To say nothing of the many and various speculations respecting the mass of our globe, whether its gravity increases as we approach its centre to such a degree as to be there equal to that of lead, or whether it be hollow or occupied by water or fire, we find in the discussions on the strata which can be subjected to observation, discrepancies of opinion so great as to be almost ludicrous. Thus, whilst one learned professor holds up to his auditors certain pieces of rock as having assumed their present form in consequence of disintegration, and subsequent combination and crystallization, by the agency of water, another, of not less learning and pretensions, in a rival school, will very gravely assure us, that the state in which we see the specimens, similar in every respect to the foregoing, and the stratification of the rocks from which they were taken, are the result of previous liquefaction by fire. Here then we have Neptunian and Plutonian, the advocates of fire and water, each calling natural philosophy and chemistry to his aid, and attempting to prove by them the correctness of his opinion; and yet these are among the gentlemen who, forsooth, very charitably, sneer at us, and laugh as far as politeness admits, at the discussions between humoralist and solidist.

To the followers of natural history, whether zoologists or botanists, we have no exception to take, so long as they occupy themselves in describing the external characters and habits of animals and plants. It is only when they would aim at elevating their studies to the dignity of a science, by classification and method, that we become sensible of their weakness. An Aristotle, a Buffon, and a Cuvier have accomplished wonders in the description and arrangement of the animal kingdom; to Tournefort, Linneus, and Jussieu we cheerfully award the palm of genius and discriminative observation in their systems of the vegetable: but imperfection is still affixed to the labours of these mighty names.

We too have our physiological characters and phenomena, our

symptoms of diseases, and accurately drawn descriptions of their progress and termination, yet no merit is conceded to us; and we are only reminded of the imperfect nosological systems of Sauvages and Cullen, and the theories of Boerhaave, Hoffman, Brown, and Rush.

After all, from no class of men do we so frequently hear all the changes rung of uncertainties, fallacies, and contradictions in medicine, as from our brethren of the profession of law. They pity us, to use a mild phrase, that we are deprived of evidence to substantiate facts; that we cannot on this evidence positively and determinately decide, like their judges, and record our decisions to serve as sure guides to our successors. In the fulness of their compassion they seem to forget the law's delay, and its worse than uncertainty. While listening to them, we should be tempted to imagine that they were governed by a system of jurisprudence founded on the nature of man, and adapted to all his wants; and of such general and universal application, that the law in it was clearly defined, and the penalties for breaking it laid down with such precision, and so extensively promulgated as to do away with all pretext of ignorance,—affording a sure protection to person, possession of property, and enjoyment of social rights, shielding innocence from persecution, and bringing condign punishment on crime. In what age or land shall we look for the original of this flattering picture? To have its full value, we ought to see it in the world entire: or has it been the work of civilisation and refinement alone? Shall we go back then to the period of Egyptian power and lore, and seek for it in the frightful despotism of her princes, and the superstition, ignorance, and debasement of her people, under the more immediate sway of a selfish, heartless, and intolerant priesthood? Where was the consistency or protection of law then? Are we to look for it under the monarchs and satraps of Persia and the east, whose word was law? Was it found in Greece, the land of arts and arms, of sages and of heroes, where a legislator in Lacedæmon sanctioned theft; and in Athens, where disinterested services and tried patriotism were rewarded with banishment, and exalted philosophy with hemlock; while property was placed at the disposition of an ignorant dicast. So far, at least, we think, without presumption, that medicine will not suffer by comparison with law; and that Hippocrates may be advantageously put in the scale of comparison with Solon and Lycurgus.

The Romans, during the time of the republic, seemed to suffer

equally, first, from their want of laws, and afterwards from those borrowed from Greece. Nor were the endless differences, and often bloody struggles, between patricians and plebeians, consuls and tribunes, likely to remedy the evil, or give greater support to justice, by the enactment of good laws. We learn, however, that their subsequent accumulation under the emperors (so great as to form camel loads) compensated most fully for earlier tardiness in legislating; and the evil became of such magnitude as to call for the codes of Theodosius II. and Justinian. But the remedy came too late, and was too imperfect to introduce order and justice in the place of general confusion, and open venality and corruption. It was left under the form of digests, institutes, pandects, and decretals, as a legacy to the modern nations who sprang up from the barbarian conquerors of the Roman empire. What are their laws, or what is jurisprudence now among them? Let the feudal privileges, customs having their origin in barbarism, the claims of aristocracies, military, civil, and ecclesiastical, and royal decrees, all having the force of law in most parts of Europe, be the reply to this question.

In France, the revolution swept away her laws of custom, of province, and of nobles, and in their stead she is now blessed comparatively with the code Napoleon, more adapted to the age we live in, and to common sense and equity. In England, from whom we have borrowed so much, we know by the confession of her own jurists, that her laws, common, statute, canon, and civil, are in such number, and particularly the two first mentioned, common and statute law, so masked by circumlocutions and technicalities, as to render it impossible for any man, during the longest life and with the most unwearied industry, to become acquainted with them; and without the fear of overcharging the picture, we may add, even with their titles. That they are frequently oppressive and vindictive is known to all; nor is it a fact of less notoriety that they are occasionally at variance with the plainest dictates of common sense. They too often give facilities for ingenuity to entrap innocence, and to throw a cloak over guilt. The mysteries of sham bails and sham pleas will very well compare with our lædantia and juvantia, or efforts to discover what will benefit a disease by knowing what is injurious to it: and indeed the fictions in law are, to the full, as puzzling and pernicious as the theories of medicine. Not all the drugs of an apothecary will so enfeeble the stomach of a patient as a chancery suit

the mind and heart of the poor suitor, who commits himself to its decision, or rather the promise of its decision. It may be bad taste, but I would prefer, for my own part, lingering with uncured dyspepsia to sinking under a broken heart. Is not the very title of a court of equity a satire upon other courts of law; yet before a poor suitor can have justice, it must be determined whether his case is to be governed by the rules of law or the rules of equity*.

We may estimate the *simplicity* and *certainty* of the law from some facts recorded by an elegant scholar, himself a lawyer (Butler). A gentleman wished a will made by which he could settle six estates of unequal value upon six sons and their heirs male, with certain restrictions in case of death, so that the estate in this latter case should go to one of the other sons. To have given full effect to this will, it would have required as many provisos as there can be combinations of the number six, which amount to seven hundred and twenty†.

Now, gentlemen, we shall hardly be accused of presumption in asserting, that we can cure any disease with as much certainty as a lawyer can make a will, if we are allowed seven hundred and twenty provisos to shield us from blame in case of failure. As to the *economy* of the law, we learn from the same writer, that if a deed, which he was instructed to prepare, had been executed in all the forms, the expense of necessary stamps would have amounted to ninety millions seven hundred and twenty two thousand pounds sterling, somewhere about the moderate sum of three hundred and sixty five millions of dollars. The fact is, that the lawyer and jurisconsult have the same problem of human nature to solve with ourselves: they may substitute what they call principles in its place, write them in blood, and decorate them with punishment and torture, but their legitimate success is not the more assured.‡

---

* Butler's Reminiscences, p. 40, Phil. edit. † Op. cit. p. 53—4.

‡ In a recent appeal before the house of lords, the earl of Eldon, in moving their lordships to make an order in the case, mentioned some extraordinary instances of discrepancy between the judges on questions of law. "The late lord Thurlow, said lord Eldon, sent a question, at one time, for the opinion of the court of king's bench, when lord Kenyon was chief justice of that court. Lord Kenyon returned an answer to the question, but it was so little satisfactory to lord Thurlow, that he sent it back to lord Kenyon, with a request that it might be reconsidered. Lord Kenyon was somewhat surprised at such a proceeding;

You will, I am sure, gentlemen, receive these remarks with the same spirit in which they are delivered; not for accusation or invective, but for the promotion of candid inquiry; the result of which shows that medicine is not so comparatively uncertain and fallacious as many intelligent and well intentioned persons would fain persuade us. With the hope of silencing those who, puffed up by the imaginary security of their own defences, still would rail at our weakness, I will adduce a few additional opinions of the philosophical and the learned on causes and certainties. First, we may say with CONDILLAC, that we know not the nature of things; but it is also equally evident, that we know not a few of the relations which they have to us. In fact, to use the language of a celebrated teacher of mathematics, if we except the mutual causality and dependence of the terms of a mathematical demonstration, I do not think that there is any other causality in the nature of things, wherein a necessary consequence can be founded. What, as has been observed by a learned divine, are the laws by which matter acts on matter, but certain effects which some having observed to be frequently repeated, have reduced to general rules. Thus, as we find it elsewhere remarked, the laws of attraction and repulsion are to be regarded as laws of motion, and these only as rules or methods observed in the production of natural effects, the efficient and final causes whereof are not of mechanical consideration. Attraction cannot produce, and in that sense, account for the phenomena; being itself one of the phenomena produced and to be accounted for. Finally, the great Locke himself, educated a physician, holds for us this consolatory language:—the communication of motion by thought, which we ascribe to spirit, is as evident as that of impulse, which we ascribe to body:—constant experience makes us sensible

---

but he did reconsider the subject, and the result was, that he gave a second opinion directly opposite to the first. I myself," added the noble earl, "at one time requested the court of king's bench to certify to me their opinion as to the estate which some person took in some lands. The court of king's bench were unanimously of opinion that he took an estate in fee. I was not satisfied with this opinion, and I therefore sent the question to the court of common pleas, who were unanimously of opinion that he took *no estate at all* in the lands in question. Now, I was impertinent enough to think that they were all wrong, and I made an order directly opposite to the opinions of both courts; and, what is very extraordinary, my decision satisfied all the parties concerned."

of both these, though our narrow understandings can comprehend neither.

Carefully abstaining then from any speculations or disquisitions on the nature or first causes of the life which animates the frame of man, or of the mind which guides its movements and actions, it shall be my endeavour in these lectures, 1. To point out to you the phenomena of life as we are made sensible of them, and the modifications arising from difference of organization or intimate structure of the several parts of which the body is composed; as well as those successive changes and alterations depending on age and external agencies. 2. To direct your attention to all the means by which the health of the body, as a whole, and the integrity and energy of function of each of its organs are preserved. And 3. To indicate that trouble and disorder in the various parts of the body, separately and conjoined, by which it deviates from the healthy standard or natural state.

In the accomplishment of the first part of our task, we shall be led to study Physiology, which may briefly be defined as a knowledge of the qualities and order of the phenomena of the body in a state of health. In the second, we go over the subject of Hygieine, or the method of preserving health and prolonging life. The third branch is Pathology, or a knowledge of the animal body in a state of disease or death.

Both physiology and pathology suppose a knowledge of function, the first of healthy, the second of diseased; and both of course presume a previous acquaintance with the anatomy or structure of the human body. As has been very correctly remarked, dissection, and the various auxiliary processes employed by the anatomist, are the only means of learning the structure of living beings: observation and experiment the only sources of our knowledge of life. These are the tests or criteria on which we must depend, and to which we must always refer. No position respecting structure can be listened to unless it admits of verification by appeal to anatomy; no physiological statement deserves attention unless it be confirmed by observation.

When we examine the human body, we find it in one sense a machine constructed on the most exact mechanical principles, and of course for the correct understanding of its movements we must be acquainted with the principles of mechanics. Considered in another point of view, we find fluids of different kinds circulating

through tubes of various diameters, to be explained in part by a knowledge of hydraulics.

The transparent parts of the eye act on the rays of light, according to the common laws of optics, and bring them to a focus, so as to form an inverted picture of the object on the retina just as well in the dead as in the living organ, provided their transparency be unimpaired; of course the phenomena of vision cannot be explained without a knowledge of the principles of optics.

Surrounded as the human body is by an elastic fluid, the air, the supporter moreover of respiration, and subject to various changes in respect of gravity, heat, moisture, and other qualities, which have great influence on the constitution, it is necessary to be informed of the nature and properties of this fluid, the knowledge of which constitutes the science of pneumatics.

Again, various changes are induced upon the fluids from chemical principles. The researches of chemistry into the composition of the fluids and solids of the animal frame, and comparative examinations of them under the different circumstances of age, sex, climate, food, mode of life, and the various incidents of disease, have thrown great light both on the healthy and disordered actions of our frames. In fine, many important points in physiology cannot be understood, nor the nature and results of many animal processes appreciated by a person unacquainted with chemistry.

But, gentlemen, while we thus freely admit the utility of the physical sciences, let us not overrate their importance, or think that we can, by a knowledge of them, form a correct estimate of the powers and movements of the animal frame. So far from this being the case in all, we cannot apply such knowledge to the explanation of any one function or process in the living body. We cannot, for instance, forget the totally opposite results at which different mathematical physiologists arrived in treating of the same functions. One estimated the force of the heart as equal to 180,000 pounds; another reduced it to eight ounces. Nor can we, with any precision, calculate by the aid of hydraulics the quantity and momentum of blood circulating in the vessels of the body, varying as it must in these particulars according to the amount of nervous influence on the heart and blood-vessels, to say nothing of the elasticity of these latter. Any attempt, moreover, to explain the operations of the nerves and muscles and glandular secretion, by chemical agencies, or resolving life into a mere play of chemical affinities, or making it

depend on electricity, galvanism, and magnetism, must lead to regrets at time mispent and labour lost.

Physiology has been much more sensibly indebted for its advancement to a knowledge of the comparative anatomy of animals, especially the mammalia, or those which most resemble man in their structure. Several important discoveries have been made or illustrated by experiments on brutes, such, for example, as those relating to the circulation of the blood, respiration, muscular motion, the functions of the nervous system and absorption, together with the effect of various medicines. Here, again, we must beware of giving too much importance to this branch of natural history; otherwise, in place of proof, or fair illustration, we are misled by remote analogies. Thus, because the gizzards of the gallinaceæ have a prodigious triturating power, and correspond in a measure to the stomach in man, it was hastily and erroneously inferred that digestion was effected in the latter by mechanical attrition. On similar grounds it has been argued, that the arteries of man, and the mammalia generally, must have a contractile power, because in some worms without a heart the vessels carry on the circulation alone: but the whole economy is too different in the two instances to admit of inferences from analogy.

The same remark applies with much force to the experiments made on cold blooded animals, in which nervous power and the circulatory apparatus are so different from those of man. Even in the warm blooded or mammalia, most nearly approaching to man in organization and functions of parts, there are very notable differences in their capability of being affected by certain medicines and poisonous substances, some of them eating with impunity what would soon prove fatal to us.

The vivisections, or experiments made on living animals, instructive as they have been found, are liable to lead to numerous and serious fallacies of induction. The alarm and terror of the animal, which is the subject of experiment, so soon as it is tied, or its rage and violent efforts to escape, destroy the habitual order and harmony of its functions. And how much greater must this disorder be when the scalpel is applied; we then have loss of blood, cutting of nerves, prostration of vital power, and perhaps convulsions; difficulties which must impede the successful prosecution of the experiment and complicate the inferences that might be drawn from it. Parts cut or tied unintentionally, and so many others de-

stroyed as to force the remaining ones to take on vicarious and unnatural action, are additional obstructions. Fearing that I might discourage you from a judicious, and properly matured course of experimenting, I shall not on this occasion lay much stress on the contradictory opinions held by many physiologists, each of whom insists on his being the results of experiments.

Surgery, and the various injuries and mutilations of the human body, of which it attempts the relief, has proved of essential service to the progress of physiology; and hence the practice of the former, and the successful study and advancement of the latter, have been so often carried on by the same individuals.

Pathology also has in part repaid the debt to physiology, by showing to what extent an organ is capable of performing its function, when curtailed of its proportions or suffering in texture. It is thus we have learned that the power and extent of vision are nearly as great with one eye as with two; that a portion of one side of the brain may be destroyed, and the process of intellect not much affected; and that one lung may be useless by hepatization or destroyed by ulceration without respiration being materially impaired.

From what has been already advanced, we may, I think, divide physiology into two branches; or, in other words, the actions and functions of our organs may be studied in two separate ways. The first is prosecuted by means of the different aids furnished by other sciences, and comparative anatomy and experiments on living animals; it consists in examining whatever is mechanical in the movements of each part, such as determining the force, direction, and effects of the contractile motion of the digestive tube, assigning to the stomach its share in vomiting, analysing all the circumstances which modify the course of the blood, and demonstrating the activity or passiveness of the arterial canals, noticing the causes of the movements of elevation and depression of the encephalic mass, explaining the mechanism of the senses, as of seeing and hearing, &c. The works of Haller, Barthez, Le Gallois, Richerand, and Magendie, abound in analyses and explanations of this part of the study of man or branch of physiology, which, however amusing, is not that which will most safely guide and enlighten the medical practitioner. It is to him a matter of comparative indifference to learn how the stomach and heart contract, or arteries act: what it behoves him to know, with the most rigorous exactness, are the

causes which accelerate, retard, or pervert, the movements of these parts: how, and under what circumstances, an impression produced on one organ is transmitted to, and felt in others more remote. With this view we must watch and analyse the effects which all surrounding bodies produce on the human frame, discover on what parts they more especially exert their action, seize by continued and attentive observation the most transient signs of the excitation of such part, and appreciate the modifications which age, sex, temperament, and idiosyncrasies produce in the general or local phenomena. Such is the true physiology of physicians; as exact and positive as the former, though demanding more time, patience, and rigid intellectual scrutiny. To it also belongs to inquire into the laws of the union between the mind and body, the effects of culture and education, civilization and refinement upon the constitution, also into the power of habit, the effects of enthusiasm, and force of imagination.

So soon as we define hygieine to be that branch of the institutes of medicine which points out the means of preserving health and prolonging life, we become immediately aware of its close connexion with physiology. We cannot treat of the former without a knowledge of the latter. The directions for selecting a healthy residence, using nutritive diet, and taking suitable exercise, must presume some knowledge of respiration, and the changes which the air undergoes in the lungs; or speaking less equivocally, the manner in which the lungs are affected by certain airs; also an acquaintance with digestion, and the influence of muscular motion on the other functions. In fine, to preserve health we must know in what it consists, which can only be learned by physiology.

The study of hygieine will be very materially promoted by a perusal of the narratives of voyages and travels in other and distant countries, whereby we become familiar with the effects of different climates and articles of food; but for the knowledge of which we should have entertained erroneous notions acquired in our own limited sphere of observation and experience. Information thus obtained will be found of safer and more practical application than that derived from experiments on animals, or on a few individuals in the immediate circle of our acquaintance. Animals have appetites and tastes so different from our own as to require nutriment of a totally opposite kind from that which we use ourselves. Thus, what inference can be drawn, for our benefit, from such experiments

as those of MAGENDIE, to ascertain the nutritive properties of certain articles, as sugar, butter, or oil, given for some days in succession to dogs. These animals sank under such food, and straightway it was inferred that it could not minister to our support. But why so strangely forget, that a dog is an animal essentially carnivorous, however much his tastes may be modified by domestication; and that of course flesh is intended by nature to be his food. We might with equal propriety give to herbivorous animals, cows for example, mutton chops or portable soup, and deduce as a consequence, from their pining away under such a diet, its inapplicableness to nourish man, who, be it remembered, is omnivorous or polyphagous, living on fish and whale oil in the arctic, and rice and bananas in the torrid zone.

One of the most valuable and delicate applications of hygieine, or at least of our knowledge obtained by the study of it, is to the convalescent from acute diseases, or the invalid suffering under chronic ones, when the organs are too feeble to take on their pristine physiological energy, and require of us the nicest discrimination in adapting to them diet and exercise calculated to bring them back to their healthy state. It is then that we desire to know the average salutary and digestible nature of articles of food, as ascertained by a long and careful observation of what had been used and tolerated in health. This apparently obvious and simple guide is, however, too often overlooked, and the patient or convalescent is made to take ingesta which would prove too stimulating to a person in full health. Thus, for example, to how many persons in chronic maladies or in a state of convalescence is not chocolate recommended for diet; and yet very little attention will satisfy us, that of twenty persons in the enjoyment of full vigour of constitution, it will disagree with ten of them, and give rise to flatulences, indigestion and other unpleasant consequences.

Pathology, the third branch of the institutes of medicine, and the end and object of our studying the others, has been already defined. It embraces the consideration of all the changes taking place in the human body, from its first deviation from a healthy or physiological state, through disease, on to entire recovery or death; and marks the appearances of the organs after this last sad termination. It of course includes the study of the causes, as well as the symptoms or diagnosis, the signs or prognosis, and the alterations discernible in *post mortem* examinations.

Ætiology, or the knowledge of the causes of disease, resolves itself into two parts. In the first we note all the external agencies which affect man; climate, atmospherical vicissitudes, localities, habits induced by civilization, including the effects of vicious education, professions and trades, also of the ingesta or various kinds of food, and of the percepta, or the passions in their extremes. This part is of course closely connected, and almost blended with, hygieine, and shall be treated of accordingly. The second division involves the inquiries into the part or organ first and most materially impaired in structure or function, and the lesion of which keeps up the morbid actions of the rest of the body. Here we find ourselves necessarily involved in the observation of symptoms, or symptomatology, so as to deduce from the outward evidence the inward suffering. As the disease advances, the symptoms become more equivocal and complex, and are presented to us in the character of certain physiognomical traits or signs which aid us in the foretelling the termination of the malady in health or death; or in other words, establish its prognosis. Such is semeiology or semeiotics.

It is in estimating the value of symptoms and signs, and determining thereby the organ primarily or principally diseased, that pathology is enlightened by physiology, and in its turn proves so serviceable a guide to Therapeutics. The symptoms of diseases are in fact but the expression of the difference which exists between the healthy or physiological, and the morbid or pathological state; and it becomes us if we would act on the principles of sound logic to scrutinize a disease, not so much for what it seems to be, as in its disabling the animal economy from affording the manifestations of a healthy state.

Let us develope still further this proposition. The means by which our organs manifest their sufferings are reducible to the following: first, pain; second, alteration of their function; third, sympathetic phenomena, which are the consequences of their correspondence of action with other parts.

We may illustrate this by tracing the conversion of physiological into pathological phenomena, or rather the transition from the former to the latter. Pain is but an exaltation of the natural sensibility of a part, and is in its intensity in disease proportionate to the latter in health, whether one or the other be excited by direct impression or sympathetic action. We all know, for example, the great sensibility of the stomach, and how variously, but still plea-

surably it is affected by different ingesta, solid and fluid. We know also from personal experience and feeling, how promptly pain may be produced in it.

Let us suppose now two persons of the same habits and tastes, both enjoying good health, and both, after long and somewhat fatiguing exercise, sitting down to their repast. The one takes food of the usual kind and quantity, with water for his beverage; he soon experiences his customary renovation of strength and corresponding pleasurable sensations diffused through the whole frame, which are productive also of mental satisfaction. After a little longer lapse of time, with a feeling of some fulness about the gastric region, he has also the skin somewhat warmer than before, his heart beats quicker, respiration is a little accelerated, with a sense of fulness about the head, and some drowsiness. Soon however, this state yields to one of vivacity of thought and movement, consciousness of strength and ability to undergo fatigue. All these constitute a circle of physiological actions, of the stomach, the heart, lungs, skin, brain, and muscles. Variation of sensibility, but no pain, is experienced.

We will now imagine the other person, companion of the one just mentioned, who, in place of taking his usual repast, attempts prompter renovation of his powers by richer and more stimulating articles of food than common; washed down by several glasses of wine. For the first few minutes he seems inclined to triumph over his friend by boasting of the exhilaration which he enjoys. Soon, however, the excitation exceeds the line of comfort and health. There is a heat and pain in his stomach, burning of the skin, violent palpitations of the heart, and hurried breathing; the vessels of the head are turgid, and throb violently; the eyes are injected, and complaints are uttered of acute pain in the head. After a time, the stomach, irritated and pained, ejects its contents, and partial relief is experienced; the skin is moister, and the secondary irritation in the heart and brain less: but now follows general languor, disinclination to muscular effort, depression of spirits, and impaired function of the senses, which are in a state of undue excitement; the eyes are watery, and intolerant of light, and the ears of sound; the sense of taste is vitiated; and we find the tongue loaded with a whitish yellow mucus.

Here we have a circle of actions of the same extent as the foregoing, and formed of the same organs; but sensibility is exalted

into pain; this is followed by disturbance of function, and a number of deviations from the healthy standard, in parts remote from but sympathizing with that first affected. The state is, in fine, changed from physiological to pathological. Would we record what we have just seen, we begin with ætiology, or causes of the disorder, and refer the external ones to the ingesta taken in excess, and of improper quality; the internal ones are the troubled actions taking place in the stomach, and morbidly affecting it. If required to prove this we refer to the well known and acknowledged physiological phenomena, already described, following the moderate excitation of this viscus; and we feel ourselves justified in commemorating the present condition of it by all the changes which have met our senses, and which we note down under the head of symptoms.

Do you desire a picture marked by stronger features and darker shading? we present you a person bent forward and unable to support himself; the face alternately pale and flushed; the eyes half open, injected, and filled with tears; the borders of the eyelids of a deep red, voice nearly extinct, respiration short, frequent and laborious; a sensation at the stomach as if it were consumed by fire, constant spitting, hiccup, nausea, vomiting of brown or bloody matter; lips, tongue, and throat, inflamed; black and fetid alvine discharges; thirst inextinguishable; great heat over the whole body; urine red, bloody, and in small quantities; occasional delirium and convulsions. You inquire into the cause of this person's horrible situation, and you learn that he has swallowed arsenic: death soon relieves his agony. We have watched and recorded attentively the symptoms; we have seen pain and great disturbance of function in many organs. Our object now is to try their value by examining the subject which has expired, and noting down the organic changes. We knew during his life time the first link in the chain of morbid derangement of function, and we find now, on examining the stomach, that its inner surface is covered in part with red spots of different degrees of intensity; in part with black patches; while in other places it is entirely corroded; that the small intestines exhibit somewhat similar appearances; the lungs are gorged with blood, and their inner surface inflamed; so also is the whole lining membrane of the throat and œsophagus, and even the inner surface of the bladder is red and engorged.

We learn, after a time, by examinations of this kind in deaths from different causes, that after the greatest distress and suffering

of the digestive organs, associated with cough and fever, there is often no structural alteration found, except in the lining membrane of the intestinal tube and lungs. In our endeavours to trace the chain of causation, we have noted the symptoms, seen the changes after death, but still waver. We look now to the guidance of physiology, and inquire whether organs have coats or membranes differing in appearance, structure and vital properties; and if so we ask which is the one dominant, or on the excitation of which the action of the viscus depends: next we desire to ascertain, whether different organs performing different functions have a common coat or coats which possess the same appearance and vital properties. We are soon led to answer affirmatively to both these questions, and, as illustration, point out the outer membrane of the eye, the same which lines the eyelid, descends with the lachrymal duct into the nose, is expanded over all the nasal cavities, lines the mouth and the canal leading to the ear, is extended to the fauces, pharynx, œsophagus and the intestinal tube on to the rectum: again, from the fauces it passes down into the larynx and lines the cavity of the lungs. So far it is a continuous membrane, and the knowledge of this fact and of its properties removes the feeling of surprise at the consentaneous action in health and disease between the different organs which it covers and lines; as, for example, the stomach and lungs. But there is yet another division of it which lines the urinary organs in both sexes, and the urethra in the male, and the vagina, uterus and fallopian tubes in the female. Between these parts and those formerly noticed there is also a remarkable sympathy; they act on and are acted on by them.

The pathologist, thus enlightened, does not lose his time in framing arbitrary divisions of diseases, according to the organ or the nature of some leading symptoms, but with a comprehensive eye examines the morbid changes in a separate structure or tissue, and seizes the key to unlock the mysteries of morbid functions. He can at once make the most prompt and beautiful application of his acquirements to the treatment of disease. Is it purulent ophthalmia, catarrh, indigestion, diarrhœa, dysentery, irritation of the bladder or urethra, or fluor albus; he sees but a disease of the mucous membrane, which will be relieved by the same medicines and remedial means. So the serous and other tissues are studied in the same way. Who does not acknowledge in these principles a guide more safe and easy than any hitherto followed for the writer on the materia medica? Led on by these means, he sees in mercury, pro-

perly administered, a useful remedy for certain morbid conditions of the entire mucous membrane, whatever may be the organ it is in union with, as in the terebinthinate class, balsams, &c. he will find useful aids to check and correct the enfeebled state of this membrane and the profluvia accompanying it. Tartrite of antimony again would seem to be the agent best adapted to control the morbid excitement of the serous tissue, as in pleurisy, &c. But I must not attempt any further applications, and hasten on to a conclusion by saying a few words on medical jurisprudence.

This science, sometimes called *legal medicine*, points out the application of the knowledge and precepts in the different branches, principal and accessary, of medicine, to the elucidation of questions of law and right, which are to determine the punishments for attempts affecting or endangering the health and life of a human being. The medical jurist to an exact knowledge of the various branches constituting medicine, properly so called, must add an acquaintance with natural philosophy, chemistry, and natural history, and even with the civil and criminal laws of the country in which he resides. The effects of external violence, as of wounds, are to be accurately traced by the physician, who is to note the succession and order of parts wounded, and be aware of the course he is to pursue in probing or dilating. Anatomy and surgery must then of course aid him with their lights, while by an intimacy with chemistry he discovers the means of suspending or preventing death from poisons; or if death takes place without his cognizance, he can determine by suitable tests the presence or absence of a poison in the stomach, for example; and also speak as to the changes of appearance and structure produced by these means. To him likewise the community looks for a decisive opinion of the true state of the mind in all those cases in which pleas of insanity are urged by the friends of an unhappy individual either to shield him from the penalty of some rash and cruel act, or for the purpose of subjecting him to a strict surveillance and partial confinement, as one no longer master of his actions, nor entitled to receive and transfer property. In this department of medical jurisprudence great advances have been made during the last half century; with the effect of making the interests of the individual under mental alienation compatible with the tenderest aspirations of humanity, while society at large is protected from any sudden interruption of its tranquillity.

Imperfect, gentlemen, as is this sketch of the outlines of the in-

stitutes of medicine and medical jurisprudence, enough, I hope, has been traced to give you an idea of the ampleness of their resources and the magnitude and variety of their applications. They require that we shall have visited the halls of every science, and selected from them some maxims and rules for our after use; they invite us to look abroad on nature, to invoke her in her calm as well as in her troubled movements, whether we be amid the elemental strife, or gazing at the bright Favonian sky.

In the grove, or on the mountain top, or by the rippling stream, we have Hygieia for our guide. With her we may study the harmonies of the vegetable and animal creation; and learn what will nourish, what heal, or what destroy in the former, and the preserving power of instinct and mute expression in the latter. Looking around on our own species, we gaze on youth and beauty, the vermeil lip, the rosy cheek and sparkling eye, not as sensualists, or idle dreamers; but to see the signs of health, to contrast them with melancholy's pale and withered face and tottering form; the stamp of suffering and disease. We watch the artless smiles and ready gambols of childhood, the impetuous and enforcing look and gesture of youth, and the sedate collected features of age, as physiognomists, anxious to catch the most evanescent expression of affection, fond and confiding, or of passions dark, wasting, and suspicious: for to us often belongs the task of administering to a mind diseased, while we at the same time alleviate the body's sufferings. Not idly or uninstructively then do we study and admire the wonders of the imitative arts by which the canvas is made to glow with innocence and love, or to present with startling truth, the care worn lineaments of crime, and the pangs of remorse. Not in vain for us ought the epic and dramatic muses to utter in harmonious numbers the sentiments of high toned resolve, meek-eyed devotion, guilt for a while triumphant by its violence, or ensnaring innocence by the aids of fraud and hypocrisy. All this is human nature; and if we are the high priests in the temple on whom devolves the task of replying to the piercing cry of pain, the desponding murmurs of wasting disease, or the maniacal shout, whose very echo makes hope turn pale, we must first have received the confessions of human infirmities, and become possessed of the reasons of every deviation from health and happiness.

How alluring, and yet how philosophical, that beautiful fiction of Grecian mythology, by which Apollo was made the tutelar divinity

of poetry, the fine arts, music and medicine. Why should we sever the bonds of relationship thus deliberately formed and solemnly sanctioned, even though *we* no longer bow to him of the unerring bow? Let but our efforts be at all commensurate with the benevolence of our calling, or the nobleness of our purposes, and our success cannot fail to be as signal as our reward will be great.

ARTICLE II.—*Acupuncturation successfully employed in Nervous Affections of the Eye. By* GEORGE BATTA QUADRI, M.D. *Member of the Bourbon Royal Academy, Professor of Clinical Ophthalmology in the University of Naples, &c. &c. Translated from the Italian by* WILLIAM DARRACH, M.D.

Acupuncturation, in the judgment of many, has received all the consideration which it deserved. It appears to me, however, that this therapeutic agent has been depreciated, and too hastily abandoned. Permit me, therefore, to present a few cases of successful treatment by its means which will establish its utility, and remove the scepticism that has of late been entertained respecting its importance.

My first attempts with this remedy were made in cases of ophthalmia and paralysis of the optic nerve; they resulted so unfavourably that I determined to have them published to its discredit. But the authority of the distinguished NEMOURS, who has so much extolled the practice, made me doubt the correctness of the opinion I had formed, and induced me to continue this Chinese practice.

Case 1.—This was a woman who had not long entered the Royal Hospital, afflicted with incipient amaurosis. So soon as the needles were introduced, a favourable change took place. The almost instantaneous benefit afforded in this case was such as to excite the admiration and astonishment of all my pupils. But, within four weeks of the operation, the restored sight failed her. Circumstances prevented a further treatment, as well as a subsequent history of the poor woman.

A careful examination of the circumstances of this first, and in a degree, favourable trial of acupuncturation, determined me to re-

gard it as a *means by which to make a salutary impression on the nervous system, to equalize the galvanic power of the deranged nerves;* and therefore not wholly to rely upon it in subsequent cases, but to follow up its employment with the use of *phosphoric frictions* to the part affected, at the same time also acting upon the digestive organs by the means recommended by RICHTER and WARDROP.

Case 2.—This new treatment was tried March 15, 1826, in the case of Miss Mary Delphine, of Saint Margaret. After a series of adverse fortune which befel the family of this truly estimable French lady, in common with that of her disturbed country, her sight became impaired; that of the right eye almost lost, and that of the left stricken suddenly with complete amaurotic blindness.

Two needles were passed through a plait of the skin of each temple, a little above the zygomatic arch. The patient began to discern objects almost immediately; the dark cloud on her vision, which had so long afflicted her, disappeared gradually. The phosphorated oil was next used, rubbed by my hand for some time over the orbits. In addition, a large dose of RICHTER's pills was administered. By this combination of means the primary effect produced by the acupuncturation was sustained and advanced throughout the day of the operation, and has terminated in perfect restoration of sight. She has, at this moment, although more than seventy years of age, the enjoyment of complete vision.

Case 3.—Prince D'Angri invited me, January 11th, 1828, to treat one of his domestics, Charles Behr, having amaurosis of both eyes, the right principally affected: objects of a certain form he could yet discern, though confusedly and enveloped in mists. The complaint consisted, doubtless, in a morbid condition of the optic nerve, together with those of the third and ophthalmic portion of the fifth pairs, caused probably by an exposure to a cold damp atmosphere when affected with an inveterate syphilis. The acupuncturation, employed as in the previous cases, produced immediate benefit. The patient began to see with remarkable distinctness. To sustain this regained nervous power, and to conduct the case to a permanent cure, the phosphoric frictions were next used; and a pill of the *deutophosphate of mercury* (deutofosfato di mercurio) administered every evening, and the alterative pill of RICHTER every morning early: hoping by this latter additional treatment to rouse the nervous system of the bowels and increase digestion, whilst at the same time, by the alternate use of these two prepara-

tions of mercury, to prevent the desired constitutional effect ceasing too soon; a common consequence, owing to the power of habit, to the *uninterrupted* and long continued use of any one mercurial preparation. This case also terminated successfully.

Case 4.—Gabriella Rudsen, a Danese, of a healthy robust constitution, but having an irritable nervous system, was attacked, first with hysteria and subsequently with a severe amaurotic affection (una vera ambliopia amaurotica grave). These complaints appeared soon after she left her country to accompany the princess Pignatelli in her travels. At first, objects appeared indistinct, and then came on, instantaneously, a state of total blindness.

From the success in the two former cases, and the belief that the nervous system of this young girl needed to be roused, I did not hesitate to make another trial of my plan. I employed the acupuncturation, the frictions of phosphorated oil (l'olio fosforato), and RICHTER'S pill, as in the case of Mary Delphine. Before the additional treatment was resorted to, the needles had, for some time, restored vision. Antihysterical remedies were subsequently administered, and in a little while she was perfectly and permanently cured.

Case 5.—Madam Abel, a French lady, who of late has resided in Naples, afforded an opportunity to show the efficacy of acupuncturation in a nervous affection, differing from all the above cases. It was not in this instance a sudden loss of sight, but a nervous attack, which occasioned a most *severe pain about the eye* (una attacco nervosa ai contorni dell' occhio il quale occasionava dolovi acerbiosini). The patient attributes the complaint to a spark of fire which fell upon the left eye-lid, below the passage of the tendon of the trochlearis muscle. This accident produced an ulceration of the eye-lid; but her present painful affection cannot depend exclusively upon a cause so local and trifling. The fire caused a slight redness of the eye, but this could not be regarded as a severe inflammation. The lady, though of a good constitution, has for some time been subject to hysteria, consequent to menstrual irregularities, occasioned partly by sedentary habits and more by her time of life. I was disposed, therefore, to conclude, that her present severely painful complaint depended on an irregular circulation of lymph about the neurilema, effected by the excitement, from the fire, of the nervous system generally, and especially of the infra-orbitar branch of the fifth pair; or, in conformity with the doctrine

I published some time since, to an irregular development of the galvanic fluid which animates the nervous system and, when unequalised, causes in the nerves the most dangerous and painful irritation.

Under the belief that acupuncturation determined a flow of the lymph from the sheath of the affected nerve to the part operated on, as to a focus, or caused a derivation of the galvanic fluid, the needle acting as a conductor, and by one or both these ways would remove disease from the nerve, I proposed to the patient the method in question. And although it seemed like adding pain to pain at first view, nevertheless, to perform this safe operation, in order only to divert the attention of the sufferer, fixed as it was on the primary seat of the disease, did not appear to me a useless expedient. I therefore passed a needle into the substance of the eye-lid precisely over the expansion of the supraorbitar nerve (nervetto infratrocleare). In a moment she felt better, and soon the pain ceased so as to permit repose and sleep, after thirty hours of agony, and in three days I had the happiness to see my patient return home perfectly cured.

Case 6.—Since my practice in the above cases, I have successfully applied acupuncturation as a revulsive to cases of severe ophthalmia, effecting advantageously by it a counter morbid action at a distance from the seat of the complaint. The severity of the ophthalmia is often thus alleviated. I have found this method serviceable when the ophthalmia begins to pass into its chronic stage, or when it is already in that condition. I have seen, however, a female patient suffering under a severe ophthalmia *in the acute stage*, who was empirically, and without my advice, subjected to the operation, and the poor girl passed several days in a state of distressing aggravation of her disease; which confirms me in my opinion, that *acupuncturation should be adopted in the chronic, and never in the acute stage of ophthalmia.*

After a knowledge of the above facts, I certainly ought not to reject acupuncturation, especially since it is not an operation, if used as in the above cases, either dangerous or very painful. I recommend skilful practitioners, after a candid consideration of this paper, to use it in neuralgic cases. They will find it advantageous in painful affections depending on a want of balance (das sbilancio di azione), in the vessels of the neurilema; in derangement of nervous function from compression of the neurilema; in cases in which

a revulsive action is demanded; and lastly, when an excitement of the nervous system would be salutary, as in hysteria and in persons of nervous temperament.

These interesting results are so directly in accordance with the established physiology and pathology of the day; and are confirmed by such authentic experiments, that it seems to be my duty to recommend acupuncturation on the principles above stated. In practice, let a fold of the skin be made; through it two or three needles are to be introduced, and there left for *three* or *four* days; after which they should be removed.

Acupuncturation of the large nerves directly, which has been practised by some, I cannot venture to employ fearlessly, particularly in the affections of the ophthalmic nerve of Willis and of the infraorbitar. From the time of Hippocrates medical men have observed unhappy results from wounds of these nerves, which we daily see confirmed by the most unfavourable instances. These recall the case of Philip of Macedon; the wound from a dart which he received on the eye-brow, was perfectly healed by Critobolus; but it was followed by blindness of the eye. I ventured however upon the practice in the case of Joseph Giavarone; no injurious consequences happened, but the operation was without any benefit.

[The cases of Dr Quadri are deserving of much attention; and the distinctions which he has so scientifically drawn between a temporary and permanent relief by means of the needles, and the consequent necessity of additional remedies for making a more effectual and lasting impression on the disease, should be carefully noted by those who would imitate the practice. Some regard should also be paid to the advice of allowing the needles to remain in the skin for three or four days; thus, no doubt, producing some inflammatory irritation, and hence proving advantageous on a principle different from that alluded to by our author.

Our colleague, Dr La Roche, from whom we have received the above communication, is personally acquainted with Dr Quadri, and speaks favourably of his professional reputation. Ed.]

ARTICLE III.—*On the Origin of Periodical Fevers in Rome, and the Adjoining Country. By* GIACOMO FOLCHI, *Professor of Hygieine, General Therapeutics, and Materia Medica, in the Roman Archigymnasium, Chief Physician to the Hospital of San Spirito, Member of the Academy of the Lincei, &c.**

Some years have now elapsed since, while advocating with BROCCHI the utility of woollen garments in the country around Rome, in which periodical fevers prevail to such an extent, I adduced some facts tending to exclude the supposed agency of *marsh miasma*, and to exhibit as remote causes of those fevers the moisture and diminished temperature which occur in the sickly regions above mentioned during the night. (*Giornale Arcadico. Gennajo*, 1823, *p.* 1.) It will not be foreign from our present purpose to recapitulate these facts. 1. A hot and constantly dry summer is the most exempt from fevers; whereas the most sickly one is that in which falls of rain alternate with atmospherical vicissitudes of temperature. This fact has no need of confirmation, since it is one of familiar experience with Roman practitioners. It may however be well to mention that in 1826, when we had so great an increase of fever patients as to require the opening of an additional hall in San Spirito, there had not been that dry summer which had been met with during the five years preceding. 2. The inhabitants of Rome who had not gone into the country contracted, nevertheless, periodical fevers by remaining during the night in those parts of the city in which, assuredly, the air was cool and moist, but in which there could not be suspected any marsh miasm; so also were those seized with fever who dwelt on rivulets remote from the centre of the city, near gardens, reservoirs of water, and in the centre itself, on the banks of the Tiber. 3. The frequent relapses in those who had suffered from periodical fevers in the city, proceeded not from the convalescent going into a suspected miasmatic spot, but from his leaving the house early in the morning and returning late in the evening, which is equivalent to saying, that he was exposed to a cool and

---

* Sull' origine delle Febbri periodiche in Roma e sua campagna.—Memoria di GIACOMÓ FOLCHI, &c.

Sent for insertion in this Journal. And translated, and read before the Philadelphia Medical Society, by JOHN BELL, M.D.

moist air. 4. In the dangerous months a fever has often attacked a person who had not been out of the city, but who, from some pressing cause, had been overheated, and who, after being bathed in sweat and exposed to a current of cool air, had his body strongly chilled; so, likewise, he who slept during the night with the window of his room open, became readily subject to the disease. 5. In these dangerous months, if there happened a change in the atmosphere from dry to moist and from hot to cold, and a loss of equilibrium in the electricity of the air, very susceptible persons, such as those troubled with hysteria and hypochondriasis, felt such disturbance through their whole frames and so manifest a coldness, that they imagined themselves to be seized with fever; and at times there ensued in them a degree of heat and alteration of the pulse having all the appearance of a fever of periodicity. 6. I have myself known an individual to be attacked with this kind of fever from having, during the suspected season, fallen asleep near a rivulet: the ground adjoining it was, however, perfectly dry; nor was there any stagnant water in the neighbourhood. 7. Many persons, likewise, are known to me, who have during many years preserved themselves from fever in the worst parts of the country around Rome, by adopting the most rigid caution in retiring within their houses before evening, closing the windows, and warming the rooms; and taking care not to go out in the morning until the sun had been some time above the horizon. 8. During my stay in Terracina, of more than forty days, and at a time when periodical fevers were exceedingly prevalent, I constantly observed that the atmosphere of the Pontine marshes was filled with a dense vesicular vapour shortly after the setting of the sun, and before day-break. 9. Our country people are little or not at all protected against humidity and nocturnal cold, are badly fed, often sleeping exposed to the heavens, with their bodies half covered by tattered garments; very different from the wealthy and noble, who are accustomed to wear woollen clothes, eat flesh meat, take particular care of their skin by the frequent use of baths, and who always retire to their houses towards evening, to wait for supper. 10. Finally, I adduced a negative argument, but yet one which merits to be taken into the account, viz. that neither Carradori nor Brocchi, nor any other chemist or natural philosopher, has been able to discover one atom of the supposed miasm, though they concentrated and examined with the greatest care the vapour in which

it is supposed to exist. This series of facts, sustained by numerous observations, is now adduced with the double view of excluding a belief in marsh miasm, as a material cause of intermittent fevers in the *campagna* around Rome, and of explaining the remote causes of these maladies. To my mind the watery vapour which is constantly given out from a moist soil during the heat of the day, and which, becoming denser at night, descends towards the lower strata of the atmosphere, accompanied with a notable diminution of temperature, is the agent which, in a body predisposed to it, occasions the fever in question; in using the language of pathologists, it ought to be called the occasional cause. It remains for us now to explain how, after this impression has been sufficiently powerful, the fever is developed in the living system, or in other words, what is the cause of this latter. And here I may be allowed to venture my opinion, to which I only attach the weight of an hypothesis; and as such it will be received by my colleagues: nor can we in truth hope for any thing but an hypothesis to explain so very obscure a phenomenon in pathology. Before stating it I must however premise some postulata.

There will not be any great difficulty in conceding to me, that the nervous system is the exciter of animal heat and electricity, since the physiology of the present day considers as unsatisfactory the explanations on this head of Lavoisier, Bichat, Legallois, and Dupuytren. It would be a waste of time to present once more the formidable objections which have been urged against the opinion of Lavoisier that calorification had its seat in the respiratory oven; or adverse to that of Bichat, who supposed that the functions of secretion and nutrition developed animal heat like other chemical operations; or in opposition again to the hypothesis of Legallois and Dupuytren, which supposed that the evolution of caloric in the animal economy was due to the change from red to dark blood. I would say on the other hand, that if we consider the different classes of animals, the different states of life, and certain morbid ones, we shall be led to attribute to the nervous system the production of animal heat. The temperature of the animal is in relation with the greater or less size and expansion of the nervous system, and especially of the cerebro-spinal portion: the heat is sensibly diminished during the sleep of hybernating animals; at times a limb of the body becomes cold, because the nervous influence is suspended in it: cold of some intensity will cause a temporary sus-

pension of the cerebral functions: a constant coldness, sensible to the hand of the physician, accompanies some fevers in which the nervous system is the greatest sufferer, as in the cold fever, and sometimes in the typhus gravior. To these considerations I would add the experiments of Brodie and Chossat, the first of whom has particularly investigated the influence of the cerebellum in the production of heat; the second that of the cerebellum and the other parts of the nervous system. Having made a section of the spinal marrow of a dog above the origin of the phrenic nerves, so that respiration could be continued, the temperature of the body was in a few hours diminished, and was carried so far as to produce the death of the animal. A cerebral commotion was induced in a large dog, by giving it a violent blow on the vertex, respiration being kept up by insufflation of the lungs: there ensued as before a fatal diminution of temperature. Not dissimilar in result was the trial made by injecting into the jugular vein of another dog a decoction of opium, the narcotic effect of which is strongly exerted on the cerebellum: a thermometer introduced into the anus of this animal gradually fell to 71½° F. at which time death supervened. In regard to the other portions of the nervous system, Chossat found, as in lesions of the cerebellum, that a decrement of temperature followed sections of the medulla spinalis just below the occipital foramen, between the second and third cervical vertebræ, and between the seventh cervical and first dorsal, made on three dogs, respectively, and in which artificial respiration had been kept up. In making the sections lower down in the medulla spinalis, from the first dorsal to the last lumbar, the diminution of temperature was proportionately less rapid. A section of the pneumogastric was also, in two separate experiments, attended by a loss of caloric, less prompt however than in cerebral lesions: and the same may be said of extirpation or contusion of the semilunar ganglion*.

The *second postulatum* which I wish to premise is this: Is it not true, that many natural philosophers of great repute, in directing their attention to the phenomena of caloricity and electricity, and observing that both are often produced together by the same cause, have thought that caloric and electricity is an identical fluid? This question in physics has been fully and zealously discussed by

---

* Influenza del sistemo nervoso sul calore animale.—Omodei, No. 63, p. 444.

Nobili, (Bibl. Univ. Fevrier, 1828, p. 218), and I may therefore be excused from entering into particulars: it may not be amiss however to mention, that the voltaic pile reduced by Wollaston to one element, acts with efficacy when strongly heated; and is capable on the other hand of burning a platinum wire by means of its electrical current; that a flame placed under bismuth and antimony, copper and zinc, soldered together, developes such electrical virtue as to cause the magnetic needle to deviate from its direction; and that the influx of caloric produces signs of electricity in the condensing electrometer; and so of many other like phenomena. If then there be every reason to believe that caloric and electricity is the same fluid, what I have said above in regard to the faculty of the nervous system to develope heat in the human body, will apply to animal electricity, and in the course of this disquisition I shall speak of one or the other fluid indiscriminately, according to the course of the argument. I have attempted to create a means out of the body, of rendering evident that electricity which is formed to circulate in tbe nervous system; but my efforts have been fruitless. I decapitated a Guinea pig, and immediately plunged the end of a wire of the galvanimeter of Schweigger into the white substance, the other into the cortical of the medulla oblongata, and afterwards of the medulla spinalis: the body was still warm, and the pulsations of the heart could be counted; nevertheless the needle of the galvanimeter was not moved from the point to which it had been directed, and yet it slightly oscillated on its axis. Perhaps the repeated touching by the hands and the steel instruments, and perhaps also the flow of blood carried off the little electricity, fugacious in its nature, which I sought for. I propose in a time of greater leisure to repeat the experiment in a different manner, and with more exactness. In the mean time there seems to me to be in the animal frame all the elements necessary for the production and diffusion of electricity, which, as in the fibro-serous membranes, continually moistened, are the conductors of it; so the nervous system in conjunction with the sanguineous is a producer of the kindly fluid which constitutes in us a life independent of the medium in which we live.

The medium by which we are surrounded, according to its state, tends at one time to impart, at another to remove from our body a portion of the thermo-electrical fluid. I ask whether a dry air and a moist air, and a temperature much inferior to that of the body

chill it equally, or one more than the other? and this is my *third postulatum*. If we direct our attention to the experiments of Edwards, it will appear that the chilling of the body proceeds in a nearly equal ratio while remaining in dry air (the minor refrigerating property of which is compensated for by greater evaporation) as it does in a moist air. He took some sparrows of a middle age, and inclosed some in receivers filled with dry, and others in receivers filled with moist air; so contriving it that there should be no counteracting circumstance to modify the results. The external temperature during the experiments differed but by a small fraction of a degree, being 74° F. The temperature of the air of the receivers was 70° F. except on one occasion, when it was 72° F. In calculating the degree of refrigeration produced by these two media, Dr E. found it to be 12°.06 F. for the dry air, and 11°.7 F. for the moist air. From the experiments of this physiologist, there would seem then to be very little difference in the loss of the thermo-electrical fluid in a dry air, or in that charged with vapour. Very different results are obtained when the human body is exposed to the two kinds of air: while the cool and dry air produces but a superficial impression, revives the colour of the skin, infuses new vigour into the fibres, and enlivens all the functions; it appears on the contrary, that a cool and moist air causes a sensation of cold so profound as to seem to reach the bones, disposes to paleness, feebleness, tremor, and in fine, operates on us not so much by refrigerating as by enfeebling the function which we possess of generating caloric in our bodies, and resisting the diminution of the external cold. The effects of this air are increased when it impresses frequently the same individual, since we find in general, that the alternations of cooling and heating being repeated on animals, though they regain their customary peculiar temperature, the period which elapses before this restoration becomes each time longer and longer. The effects of a cold moist air are increased also when it operates on individuals who cannot long support a chilling of the body, such are old persons, and those of a thin habit of body. It is a fact tested by experiment that of two individuals of the same species, the temperature of whose body is diminished an equal number of degrees, the younger is the one least suffering, and most promptly restored to health. In fine, overlooking other circumstances, it may be asserted that the effects of a cool moist air are more potent on a man asleep, since sleep is naturally accompanied by a diminution of the

faculty (in a body under its influence) of evolving its own caloric; and in animals called hybernating, when they fall asleep in the summer, the temperature is much diminished, the respiration slackened, and the limbs become torpid; though to a less degree than in spring.

But, however great may be the loss which the animal suffers, there soon succeeds a reaction; and this brings us to the *fourth postulatum*. I may here adduce, as illustration of this principle, the accelerated movements of the heart and arteries, and even fever itself after abundant hemorrhagies; the augmented specific vitality of the stomach, even to the degree of heat and inflammation, after the depressing action of a poison. But not to lose sight of the subject in question, I would say, that in the very state itself of chill, that is in a loss of the thermo-electrical fluid, there have already begun the first movements of reaction in the living body; the pulse is already accelerated, and the respiration more frequent. The reaction is still more evident, when the animal, in being removed from the external medium, passes into another warmer one; then, as the application of the external heat restores to animals their faculty of reproducing internal caloric, then, I say, the movements of the heart and arteries become more hurried, the colour of the face is revived, and there is much more heat developed than is required by the wants of life. Should we, on the other hand, by the application of fresh cold, suppress the first movements of reaction, there would result alarming consequences, if not the death of the individual. Currie has borne testimony to the death of a person subjected to cold affusions in the first stage of intermittent fever. But of the systems of which the human body is composed, which is always the chief agent of that reaction, tending to re-establish the equilibrium of its heat and electricity? Having proved that the nervous system is that which in the state of health excites and maintains the internal caloric, as above shown, what doubt can exist of its being the first cause of reaction after a great chill? Nor in truth do I see how the sanguiferous system, for example, can give the first impulse to reaction without receiving excitement from the nerves; and still less how in extraordinary oscillations the lymphatic or muscular system can come in for any share, without having derived an impulse from the nerves. It is true, indeed, that the nervous system once beginning to act, it soon calls into consent the heart and great vessels; and this accordance of action is so common, that we ob-

serve it in the passions of the mind, in strong sensations from external causes, and in a thousand other circumstances.

Having laid down these premises, I now come to an exposition of my hypothesis on the origin of the intermittent fevers of Rome, and the adjoining country. A person who remains for some time in one of our sickly spots during summer and the first autumnal months, and who, not sufficiently protected from the surrounding air, goes to sleep, or sallies out early in the morning, does so with the almost certain effect of having a periodical fever, either of a benign or malignant character. Our unhealthy situations exhibit in the hot months a difference of temperature between day and night sometimes amounting to 34° F.; added to which, they are overcast during the night with a vesicular vapour, such as that which is raised from low and moist grounds by the sun's rays, and which becomes denser and descends to the earth in the early hours of the morning. That person, therefore, who exposes himself to this medium, and sleeps in it, must necessarily undergo a long and profound refrigeration of the body; in other words, must undergo a great loss of the thermo-electrical fluid, it being in fact the property of cold and moist air to chill the body more than dry air, and still more during sleep, as we have already seen. Even if an individual does not sleep in an unhealthy situation, yet should he expose himself in it about sunrise, he will suffer nearly as great a diminution of temperature, only it will be of shorter duration; for the vesicular vapour at this time, passing into an elastic state by the agency of the sun's rays, acquires greater capacity for retaining the thermo-electrical fluid, and hence abstracts it in larger quantities from the bodies with which it is in contact. This fact is based on the observations of celebrated natural philosophers, such as VOLTA and SAUSSURE. Now if to a great loss of thermo-electrical fluid succeeds a reaction in the body tending to heat it, there will immediately be accelerated circulation and respiration, which gradually increasing will finally amount to a true fever, especially if the individual shall be exposed to artificial heat, and feel the impression of a warmer atmosphere, so that the faculty of producing internal caloric is rendered more active.

It is not now difficult to conceive how, from the above mentioned causes, should arise a periodical fever either mild or malignant. The difference will, in my opinion, depend on several conditions, such as the age, temperament, constitution, kind of life, and prior state of

health of the individual attacked with the disease; but chiefly on the degree of chill and reaction. It is natural that a subject somewhat advanced in life, of a bad temperament and weak constitution, little or badly fed, and who had not before enjoyed the best state of health, should feel more profoundly the impression of the before mentioned causes, and fall into a pernicious or malignant as likely as into a benign intermittent. It is also natural that a longer or greater refrigeration of the body (and this more frequently happens in summer on account of the greater difference of temperature between day and night), by chilling, as it were, the powers of life, should throw the individual into that state of pernicious intermittent, by FRANK called *nervous*, by others *hyposthenic*, and principally consisting in fainting and cold fits, in which, if suitable stimuli are not promptly applied, the faculty of reaction is lost, and with it the vital heat. So, on the other hand, if, through particular predisposition, the reaction is of too exalted a degree, and the blood vessel system, called into consent of action, is powerfully excited, there may ensue one of those pernicious fevers distinguished by distress and oppression of some of the great viscera, and in which safety requires the emission of blood. To my mind, however, the lethargy, the anxiety and pain of the hypochondria which accompany the paroxysm of pernicious lethargic, pneumonic, hepatalgic intermittent fever, are not signs of true inflammation; but rather of an extraordinary fulness of the vessels of the organ produced by a particular mode and manner of reaction. Professor TOMMASINI has already thrown great doubts on the belief in intermittent phlogosis.

But it will be said, that fever is not immediately developed after the noxious action of a cold and moist air, but that a time longer or shorter elapses, after which the paroxysm, beginning with a chill, comes on; and hence it would seem referrible to other causes. While admitting this, however, it cannot be denied that a person who, in the nights of a variable summer season, has slept in the open air of an unhealthy spot, does not feel a general uneasiness throughout his frame, even though he may not be immediately seized with fever; nor is the effect of moisture and cold always the sensation to which we affix this name, but consists in a prostration of strength and feeling of uneasiness, as has been well remarked by EDWARDS in his physiological inquiries. If to this uneasiness succeeds a febrile movement, not immediately, but after the lapse of some hours, ought we not to regard this latter as a vital reaction, tending to re-establish

an equilibrium, and an effect of the above mentioned cause? How often do we not find that pain, terror, and in general all depressing agents, are followed after a certain time by a febrile movement? Shall we therefore say that this latter does not depend on the former, or that it is not a true reaction? As in this reaction the nerves play a primary part, can we wonder that they arouse in the sanguineous and muscular systems convulsive contractions, and hence give rise to that stretching and trembling of the limbs, and the coldness experienced by the patient at the beginning of a paroxysm?

It will be alleged, moreover, that some persons living in sickly countries are not affected with a true fever, though their health becomes gradually deteriorated, and their functions, especially the assimilating ones, are disordered. In these cases I am of opinion, that the external causes of moisture and cold did not operate with sufficient force on the body to elicit in it a febrile reaction; but yet are productive of slight and frequent excitation both of the nervous and vascular systems. This repeated excitation, though below the febrile grade, must, notwithstanding, be injurious to the animal economy; and in an especial manner retard the progress of the circulation in the vessels of the abdomen: hence enlargements of the liver and spleen, serous effusions into the cavities, disordered digestion and chylosis. Let us add that the alternations of a very hot air during the day, with cold and moisture at night, are productive of great derangement of pulmonary and cutaneous transpiration; and that not unfrequently substances unfit for nutriment, and even injurious in their nature, are taken in and affect the digestive mucous surface, which has also a consensus with the skin both by continuity and similarity of structure. These circumstances are to my mind sufficient explanation why persons residing in sickly districts should have their health greatly deteriorated without their undergoing any very manifest febrile excitation.

It now remains for us to explain by my hypothesis two points in pathology and therapeutics of a very obscure nature, viz. the periodical return of the fever, and the specific virtues of the Peruvian bark and its preparations in the cure of the disease. As to the first, we might, with many, refer it to the force of habit, and say that the animal movements, whether healthy or morbid, once excited, readily recur, and that with a certain degree of regularity in regard to time and power which would constitute the period. But

how, by this process of reasoning, can we give an account of the second and third febrile paroxysms before the pretended habit has been established in the diseased body? How account for the spontaneous cessation of an intermittent fever in the spring? And to what, in fine, is this habit of morbid actions reduced, if it be not founded on a physical reason, and in the case before us on a predisposition left by the last paroxysm? Admitting then, that in order to explain, after a sound theory, the periodical return of a fever, we must seek in the first paroxysm the reason of the second, in the second that of the third, and so on, I am of opinion that the cause is in the alternate loss and reproduction of the thermo-electrical fluid. We have shown at the beginning that the first paroxysm is occasioned by moist and cold air, and that it is a reaction of the animal frame to recover its lost caloric and electricity. This paroxysm terminates and is resolved by a flow of sweat more or less copious. Who does not see that this same sweat, or rather the moistening of the skin, by causing a fresh loss of the thermo-electrical fluid, is the most probable cause of the following paroxysm? The skin, which is naturally a non-conductor, and may be regarded as the bark of the human body, destined to preserve the imponderable substances, once moistened becomes a conductor, and opening a free passage to the thermo-electrical fluid, gives rise to a second reaction, or in other words, to a second febrile paroxysm. I discover a strong support to my explanation in the following facts: 1. The heat developed in fever diminishes in proportion as the sweat flows and removes the delirium of the patient caused by the excessive excitement. 2. During the sweating stage the patient feels slight rigors which announce the loss of the thermo-electrical fluid, and he is often so far deceived as to believe that the fever, before entirely leaving him, has made a slight fresh attack. 3. Even in the period of the apyrexia, the skin continues to be soft, and at times moist and cool; and it is not uncommon for us to observe, that the day in which there is an absence of a paroxysm the moisture of the skin is greater than common. 4. The more abundant and prolonged the sweat at the termination of the fever, the more intense is the following paroxysm: an example of this fact is furnished in the malignant sweating fever, the subjects of which being bathed in a long and profuse sweat are always rendered thereby more prone to fresh and more violent attacks. 5. If the hot be not followed by the sweating stage the fever loses its character of intermittent;

since in the sweat being absent there is a failure of the condition on which the preceding paroxysm should be resolved, and the following one be brought on. 6. Finally, the night preceding the next paroxysm of fever is always past in restlessness, which is more felt as the body is already predisposed to a second reaction and a second febrile excitation. It seems to me then sufficiently probable that the moisture of the skin on the decline of the fever, and the consequent dispersion of the animal thermo-electrical fluid is the cause of a fresh reaction—a fresh paroxysm; since the cause of the first was the subtraction of this same fluid by the moist and cold medium in which the body had been placed. If vernal intermittents are sometimes spontaneously cured, we must also admit that they are slight; and that the sweat of the first paroxysm is such as to dissipate at once the excess of the above fluid, and to re-establish a salutary equilibrium in the body.

As to the efficacy of the Peruvian bark in removing a periodical fever, which is the last point on which I shall touch, I would first state that we can only avail of the active portion of the bark or the quinia, which in the best species amounts to ten grains in the ounce: in fact, with twenty grains of the sulphate, and still smaller doses of the pure quinia, we often succeed in preventing a return of the febrile paroxysm. Now in reference to the medicines which exert, in the smallest doses, most powerful effects, the idea of professor MONICHINI seems to me a happy one. When he speaks of the eminently purgative virtues of the oil of the croton tiglium (*Giorn. Arcad. Agosto* 1824, *p.* 129), he supposes that medicines thus active operate by an electrical relation which they have with certain organs of the human body. It now remains for us to determine, whether the quinia has a suitable electrical relation to the nervous system, which is the one chiefly brought into action in periodical fevers. We have already in its proper place stated that the nervous system produces reaction, and takes on morbid excitement because it has lost the thermo-electrical fluid either by the application of a cold and moist air, or by the sweat of the preceding paroxysm: which is equivalent to saying that the nervous system, prior to the coming on of the attack, is in a state of negative electricity. If then we can prove that the quinia has naturally the positive electricity, and that the sulphate of quinia in being dissolved in the juices of the stomach imparts this kind of electricity, we shall have exhibited the electrical relation between

the medicine and the organic system on which it makes its impression, and furnished a tolerably plausible explanation of its activity being so incommensurate with the dose in which it is given. The properties of the quinia, similar to the alkalies, made me suppose in advance that it was to be classed among the number of the positively electrical substances: but of this I was determined to assure myself, with the aid of the Voltaic pile. Putting therefore in a tube, turned to an angle, a watery solution of the sulphate of quinia, and introducing the metallic wires of the apparatus into the corresponding portions of the tube, the salt soon became visible, and the quinia went to the negative pole, round which it was collected in small crystals. As to the sulphate, which is often employed instead of the simple quinia, I wished to know, whether, by being dissolved in or mixed with an acid, it would manifest electrical signs, and, bearing in mind the observations of Prout and Children, from which it would seem that the acid predominating in the stomach is the hydrochloric, I made use of it, and in another experiment of the lactic acid. At the moment of the solution of the sulphate in one of these acids I immersed into the liquid the end of a metallic rod connected with the plate of the condenser, but saw no signs of electricity in the straw electrometer. I changed the wire by substituting for one of brass others of platinum and copper, of various sizes, and also a small cone of carbon, but still without my being able to discover any signs of electricity. A like result followed the experiment when the solution of the sulphate in the acid was put into a platinum cup, and placed on the plate of the electrometrical condenser, and when both the wires of the duplicator of Schweigger were immersed in the liquid contained in a crystal vessel. Remembering the observation of Becquerel, that in the solution of salts in water there is a weak electrical current, either because salts are poor conductors or from some other cause (*Journal de Chimie et de Physique*, *Decemb.* 1823, *p.* 351), I fastened to the wire of the duplicator two small brass plates, the better to collect the electricity which might perchance be now extricated. Accordingly I immersed at the same time the two plates in the diluted hydro-chloric acid, while dissolving in it the sulphate of quinia, and I obtained a divergescence in the needle of the duplicator of five or six degrees towards the west, being the same direction in which the needle turns when zinc and copper are attached to the wires and immersed in the acid mixture. The action of

the hydro-chloric acid on both the plates being equal, it is fair to presume that the weak electrical current in this last experiment originated from the same cause with that noted by BECQUEREL in the solution of neutral salts in water. If then the quinia possesses naturally the electro-positive state; if the sulphate of this base on solution in an acid gives a current, weak indeed, but evident by the galvanimeter, I would say anew, that their electrical power seems in perfect relation with the nervous system prior to the attack of the febrile paroxysm. The nervous centres are moved to re-action in order to repair the loss of the thermo-electrical fluid: the medicine when administered directs in preference its power on the nervous fibre, effects a re-establishment of equilibrium, and prevents, in consequence, that reaction which would eventually accomplish the same purpose. However much I may be seduced by this explanation of the efficacy of the bark against periodical fevers, it is still open to many objections, and regarded by me as hypothetical. When compared, however, with the explanations given by others, I find new arguments in its favour. To say that the bark cures an intermittent fever by stimulating the solids of our body is the same thing as uttering a general proposition which does not set out from a principle, and gives no explanation of the specific virtue of the medicine; still worse is it to aver that the bark cures by *counterstimulating* and depressing the vital powers; and more faulty again were we to attribute its virtues to a repair of the organic compound, not knowing nor seeing any possibility of discovering in what consists the organic compound in a periodical fever. I need not mention here the hypothesis which supposes that the Peruvian bark operates by neutralizing, destroying, and driving out the paludal miasm, introduced into the body of the sick person, and regarded as the material cause of the intermittent: these, and other like conceits are, to use the language of professor MONICHINI, *either obscure and unintelligible, or inadmissible by the errors and contradictions which they involve* (*loc. cit.*). My hypothesis seems free not only from these errors and contradictions, but if I do not mistake, it furnishes aid in the explanation of some facts relating to the cure of periodical fevers. I will take the liberty of mentioning some of these. We can, for example, explain, 1. Why the bark and its preparations are not adapted to the hot stage of an intermittent, and are only admissible towards its decline. 2. Why it does not suit, and will not succeed in preventing the fit when given only a short time before

its accession, while the reaction is on the point of coming on. 3. Why the bark is inefficacious as well as injurious in a fever of a continued nature, or in an intermittent approaching to a continued type, in which the paroxysms are not sufficiently distinct and separated, nor terminated by sweat. And 4. Why so many distinguished practitioners, such as RIVERIUS, ETMULLER, WEDEL, LIND, ODIER, and many others, have found opium so useful in rebellious intermittents: now the active principle of this drug is the morphia, which is of an electro-positive nature, and hence has a resemblance to the quinia*. We also see why the faba St Ignatii, containing strychnia, has been advantageously employed in the cure of these fevers. 5. Why the best means of preventing a relapse is to administer between the paroxysms large and frequent doses of the bark, according to the directions of RUBINI in his well known essay on this subject†. 6. How a profound passion of the mind, a powerful and sudden impression, has sometimes arrested the approaching paroxysm of an intermittent fever, examples of which are given in the ancient writers and in the recent clinical annals. But I will not wander too far into the region of conjecture, and will leave to the reader the liberty of suggesting applications which he can do in his own mind more effectually than I can.

---

* See Delect. Opusc. J. Frank, Vol. I. p. 203. Joann. Jacob Schaertlich. Dissert. *De usu opii in febribus intermittentibus.*

† *Sopra la maniera atta ad impedire la recidiva nelle febbre periodiche, &c.* A critical analysis of this work by the translator of this paper will be found in the sixth volume of Dr CHAPMAN's Medical and Physical Journal.

ARTICLE IV.—*Case of Obstinate Constipation of the Bowels successfully treated. By* THOMAS SYDENHAM BRYANT, *Surgeon of the U. States Army at Cantonment Leavenworth.*

Some days previous to the 20th of April 1828, a soldier, named Deurond, applied to me for a dose of sulphate of soda, in consequence (as he said) of being much bound in his bowels. He did not come on the sick report until the morning of the 22d, when he informed me that his bowels were still costive, and that he had a dull heavy pain about the loins, which extended across the abdomen, in the direction of the umbilicus. I directed him to take twenty grains of calomel with fifteen grains of jalap, which produced a very trifling motion; and upon visiting him in the evening prescribed an enema of ol. ricini, and as the pain was still more increased, bled him largely, and applied a blister over the abdomen. The enema had not the slightest effect; the blister drew finely: but upon seeing him on the morning of the 23d, I found the symptoms not at all abated. I therefore directed an enema of two drachms of socotrine aloes, and administered twenty grains of calomel with twenty-five grains of jalap by the mouth. After waiting some hours and finding no abatement of the symptoms above mentioned, I ordered an enema of forty grains of tartrate of antimony, which was exhibited with the common enema syringe, to which was attached a long elastic tube, so as to throw it some distance into the intestines: this was followed in a few hours after by one of an infusion of tobacco (a drachm to a pint of boiling water) by the same apparatus; my object being to reduce the muscular contraction, on which I believed the disease to depend. After the last mentioned remedy, he complained of considerable sickness at the stomach, together with giddiness, but it had no effect upon the bowels whatever. The enema of tobacco was repeated, together with thirty grains of calomel by the mouth, without the desired effect, although the dose of calomel was repeated.

Upon the following day (the 24th) he informed me that no operation had yet been had on his bowels; the pain was still unabated, and he had a dry furred tongue. Sixty grains of tartrate of antimony were directed to be given in enema, and half a drachm of argentum vivum to be given by the mouth, which it was found necessary to repeat, but without the least effect.

I began at last almost to despair of affording any relief, but I determined to persevere until I should be convinced that all means were unavailing. I therefore, as the pulse seemed imperatively to demand it, bled him sixteen ounces, and placed him in a warm bath, in which he was kept until syncope was induced: a large blister, so as to cover his whole abdomen, was then applied, and the enema of tobacco once more exhibited. Recourse was again had to the warm bath and injection, but without the slightest effect, either in mitigating the pain or causing a relaxation of the muscular system; for after the first enema (of tobacco) no sickness or any other effects usual after the administration of that article were produced.

From the ill success which had attended the administration of the foregoing remedies, I was at a loss how to proceed. The idea struck me that it might depend upon spasm of the bowels, and I therefore adapted my remedies accordingly. I commenced in the evening with giving him an enema of half an ounce of assafœtida, with two table spoonfuls of sulphuric ether, (still employing the apparatus before mentioned) which produced a slight movement of the bowels: half an ounce of the spirit of turpentine and half an ounce of olive oil were then given by the mouth; and I left him for the night, directing the attendants to repeat the injection every two hours until day.

The next day (the 25th) I found that, notwithstanding the enemata were continued through the night, as I had directed, still no discharge from the bowels was had. They were ordered to be repeated hourly. His pulse was slow and languid, and his tongue encrusted with a brown or black fur. About noon I again saw him, and was much gratified to find that he had discharged a considerable quantity of a dark jelly like substance, very much resembling tar. This occurred several times until he had voided about four pints, when the fæces began to assume a more natural appearance. I directed the enemata to be continued, though at longer intervals, which was attended with very good effects. In the mean time his mouth swelled, and a violent salivation supervened, the effect, no doubt, of the mercury he had previously taken. On the 27th I again saw him, and directed the enemata to be discontinued, and an ounce of ol. ricini given by the mouth, which produced a most desirable effect.

After this time he continued to convalesce rapidly; his bowels resumed their ordinary functions; and he is now one of the heartiest men at the Port.

The above is given without any remarks: its being a case of great practical importance is the only reason of my laying it before the profession.

I should have mentioned that my patient, according to his own account, had had no discharge from his bowels for ten days previous to his applying to me: but as it gave him no uneasiness he neglected it until the time mentioned.

ARTICLE V.—*On the Employment of Cotton as a Dressing for Blisters.* *By* A. P. MERRILL, M. D. *of Natchez, Mississippi.*

Natchez, January 23*d*, 1829.

Dear Sir,

I have long had it in contemplation to communicate for the North American Medical and Surgical Journal a new mode of dressing blisters, which, so far as I know, has its origin with me.

Blisters that are not required to be kept discharging for any length of time, are readily healed by the application of finely carded cotton, as in cases of vesication from burns. The cotton should be applied as soon as the vesicating plaster is removed, half an inch or more in thickness, and sufficiently large to ensure the complete absorption of the discharge. In two days, under ordinary circumstances, a new cuticle will be formed and the blister cured. This dressing gives no pain, and may be adopted with particular advantage in dressing blisters upon the nucha, when the patient is confined in bed, and also for persons who are not *confined* by indisposition; as blistered surfaces, when dressed in this manner, give so little inconvenience as not to interfere with the motions of the body in common exercise.

Should you consider this piece of *medical intelligence* worth publicity, please to notice it as such.

A. P. MERRILL.

Dr CH. D. MEIGS.

Article VI.—*Cases illustrative of the Proper Use of Mercury in Venereal Complaints.* *By* William Darrach, M.D.

Read before the Kappa Lambda Society.

The object of this paper is to show that the mercurial practice in syphilis should not be abandoned; although it has been both uselessly and injuriously employed. This will be attempted by presenting, in addition to three cases, a tabular view of the practice of the London Locke Hospital during the winter of 1820, as drawn from notes of cases taken by me while one of the visiting students of that institution.

Let us previously present a short historical sketch of the vicissitudes of mercurial practice in the disease in question; that we may discern to what extreme we are now tending, and the consequences.

Mercury was used in syphilis as early as A.D. 1498. The introduction of it met with strong opposition from the public and also from the mass of medical practitioners. Success by degrees removed prejudice, and a mercurial treatment in venereal cases became general. This general use was a precursor of its rejection by the profession. Thoughtless, fool hardy, routine practice multiplied cases of failure, aggravation, and mortality. Daring and destructive empyricism, on the one hand, and a too timid practice of intelligent physicians, on the other, abolished the use of mercury. Every where, and at all times, cases presented themselves which exhibited the compound evils of syphilis and mercury; shunned by physicians who confessed openly their ignorance of the nature of the complaint and the remedy. How evidently it now appears, that the remedy was near them, and only hidden by the fruits of heroic practice. Mercury became reprobated. The desideratum was what could cure syphilis *without danger*. Guaiacum was introduced in 1508, by Ulrich De Hutten, physician of Charles V. of Spain. He published that three thousand desperate cases were perfectly cured by the decoction, and that the constitution was re-established. One of these cases occurred in his own person. He had suffered nine years with intolerable pains, ulcers, caries, exostosis, and extreme emaciation of body; had used eleven courses of mercurial frictions: and eventually was perfectly cured

by the guaiacum. Universal reception was soon given to the article as both *curative* and *safe*. Indiscriminate practice followed; and the new remedy with the more frightful forms of the syphilitico-mercurial disease after a while ceased to attract attention. In 1535 the smilex aspera was introduced by VASALIUS. FALLOPIUS destroyed its popularity. Sarsaparilla was next extolled, then the sassafras, and subsequently, a compound decoction of the woods. From the use of this physicians retrograded to the methodic practice.

JOHN HUNTER restored the mercurial treatment. As before, so now a second time, it became universal; its universality was followed by abuse. The suburbs of cities, and army, navy, and city hospitals, were again filled with complicated varieties of aggravated syphilis. Loss of confidence in mercury reappeared. Publications on the abuse of it, on mercurial disease, on pseudo-syphilis, &c. together with placards at the corner of the street, headed 'venereal without mercury,' became common. And now, if the profession were examined and cross examined before a civil court, as to the merits of the mercurial and non-mercurial practice, the latter perhaps would gain the cause. The subjoined report of the London Locke Hospital is presented to show that mercury, though unnecessary in a considerable number of local complaints on the organs of generation called venereal, and positively harmful in many serious cases, if used without much care, is, notwithstanding, the remedy for unmodified syphilis; and to be regarded not only as useful but also as indispensable.

TABULAR VIEWS OF THE PRACTICE OF THE LONDON LOCKE HOSPITAL DURING THE WINTER OF 1820, AS DRAWN FROM NOTES OF CASES.

TABLE, No. I.

CASES IN WHICH MERCURY WAS NOT CONSIDERED NECESSARY

Complaint.	*Cause.*	*Treatment.*	*Result.*
Excoriation of the glans penis	Filth	Simple ablutions	Well.
The same, with condylomata and gonorrhea	Connection	Ung. zinci, &c.	Well.
Small superficial ulcers of the glans and scrotum	Filth	Purging and ablutions	Well.
The same of the prepuce, with bubo	Irritated herpes	Cerat. calaminaris	Well.
A case of large ulcer in each groin; one of which contained an enlarged and exposed inguinal gland	Chilblains	Rest and antiphlogistics	Well.
Bubo	Irritated hæmorrhoids	Rest and antiphlogistics	Well.
The same, without previous sore or discharge	Unknown	Cerat. sapon. and pill. ferri cum myrrh.	Well.
Ulcer of the penis consequent to sloughing of the glans penis from paraphymosis	Unknown	Simple dressings	Well.
Sloughing ulcer	Unknown	Black wash and decoc. sarsap.	Well.
A deep ulcer in the groin recurring after an irregular use of mercury	Unknown	Decoc. sarsap.	Well.
Small ulcers on the end of the glans penis remaining a length of time after a profuse use of mercury	Debility	General diet & simple dressings	Well.
Large ulcers on the right labium pudendi, with healthy granulations	Connection	Simple dressings and rest	Well.
Disease of the frenum prepucii	Unknown	Dec. cincho. 1 lb. sulp. acid dilut. ℥i. M. ℥ii. q. t. d. and as a wash, aq. calcis pt. i. vin. opii ℥ii. M.	Well.
Chops and ulcers on the lips and in the mouth	Mercury	Ung. zinci.	Well.

TABLE I. CONTINUED.

Complaint.	*Cause.*	*Treatment.*	*Result.*
Warts on the penis	Connection	Strong Goulard's oint.	Well.
Fissures	Unknown	Saturn. lot. sol. nit. arg. and ung. zinci	Well.
Enlargement of metatarsal bones	Unknown	Guaiacum	Well.
Painful affection of the throat	Unknown	Dover's powder	Well.
Vascular swellings on the cicatrices of rupea	Unknown	Diet	Well.
Leprous eruptions extending into the meatus audit. ext. affecting the hearing	Unknown	Dulcamara	Well.

TABLE, No. II.

CASES IN WHICH THE FREE USE OF MERCURY HAS DONE HARM.

Ulcer on the penis; the system quickly affected by the oxymuriate of mercury; tonsils swollen, a sloughing ulcer appeared in the throat; patient became weak and emaciated	Connection	Mercury omitted, ext. and decoc. of sarsap. and cordial diet substituted	Well.
The same, aggravated by mercury	Connection	Mercury omitted, acids and purgatives used	Well.
Enlarged gland in the groin, sloughing under the use of mercury	Unknown	Mercury omitted, opium used	Well.
A large ulcer on the labium pudendi, with spots of healthy granulations	Unknown	Mercury omitted, carrot poultice used	Well.
Extensive ulcer on the elbow, spreading under the application of the mercurial ointment	Unknown	Merc. oint. omitted, and Turner's cerate used	Well.
Ulcer in the throat, patient salivated by ℥v. of merc. oint. ulcer healed, but the individual left in a deplorable condition	Connection	Unknown	Unknown.

TABLE II. CONTINUED.

Complaint.	*Cause.*	*Treatment.*	*Result.*
Rupea: i. e. an ulcerative cutaneous eruption, becoming a phagedænic ulceration of the derm; a secondary form of syphilis in persons whose constitutions have been previously injured by mercury, and in which mercury, if not used sparingly, does harm, viz.			
1. A case of rupea, patient profusely salivated, causing an extensive foul ulceration of the left palate, tonsil, pharynx, and glottis, followed with pain in the limbs	Connection	Mercury omitted, cincho. ʒiv. steam of conium maculat. leeches ii. to throat, opii gr. ii. o. n.	Well.
2. A case of rupea, ℈ss. merc. oint. o. n. Ulcerations continued	Connection	Unknown	Unknown.
3. A case of rupea: mercury cautiously used, quickly salivated; patient returned with swellings on the cicatrices	Connection	Unknown	Unknown.
4. Case of rupea salivated by ℈iv. merc. oint.: the constitution impaired by the previous use of mercury	Connection	Unknown	Unknown.
5. Case of rupea; patient has frequently taken mercury; constitution now quickly affected by a very small quantity	Connection	Unknown	Unknown.
6. A case of rupea; patient has suffered four salivations, and now affected quickly by a small quantity	Connection	Unknown	Unknown.
7. A case of rupea; the ulcers filling and healing in the centre and spreading at the edges, surrounded by an areola; appeared four months after profuse salivation, of eight weeks continuance, effected uselessly to cure two ulcers and bubo	Connection	Brown ointment, Lisbon diet drink, lb. i. ext. sarsap. ʒi. M. o. d.	Well.
8. A case of rupea, and swelling of the glands of the neck appearing after a profuse use of mercury: there exists also a small ulcer on the end of the glans-penis	Connection	Tinct. cinch. ʒi. and oxymuriate merc. grs. viii.	Well.
A case in which mercury quickly acted on the system, followed by sloughing in the throat, prostration, and death	Connection	Mercury	Death.

TABLE, No. III.

CASES IN WHICH MERCURY WAS USEFUL AND NECESSARY.

Complaint.	*Cause.*	*Treatment.*	*Result.*
Painful sloughing ulcer of the penis continuing until the mouth was slightly affected with mercury. N.B. The mercurial action was neither sudden nor violent. The mercury after a few days produced a slight effect on the mouth, which was sustained without violence. The pain which might have done mischief obviated by opium . . .	Connection	Mercury in connection with opium and sarsaparilla .	Well.
Sloughing ulcer without much pain	Connection	Mercury . . .	Well.
Foul spreading ulcer on the glans penis. This ulcer had a dry blackish slough at the edges, and a whitish adherent sloughy matter on the surface. When the mouth became affected by mercury the ulcer became clean and healthy. The bowels becoming disordered and the constitution irritated, the sore again ulcerated. Mercury omitted, opium and rhubarb administered, bowel complaint ceased, and the ulcer resumed its healthy character and has healed	Connection	Mercury, then opium and rhubarb pill . . .	Well.
Painful foul spreading ulcer with condylomata. Opiate poultice to the ulcer until the slough separated, with moderate and continued mercurial action and mercurial ointment to effect a desiccation of the condylomata terminated this case favourably	Connection	Mercury, opiate poultice, and merc. oint. . .	Well.
Foul spreading ulcer of the prepuce. This part was almost destroyed. Under the mercurial, in connection with antiphlogistic and soothing treatment, the ulcer assumed a florid surface, without induration, and healed	Connection	V. S. ℥viii. Haust. senna, hemlock poultice, and merc. oint. ℥i. o. n. . .	Well.
Foul spreading ulcer. After forty days treatment the ulcer healed .	Connection	Calomel pill gr. i. per diem, ℥i. merc. oint. q. d. .	Well.
Œdematous induration of the prepuce. An ulcer previously existed which skinned without the use of mercury. The place of this ulcer continued to be surrounded with a cartilaginous hardness, and soon became united with an œdema of the entire prepuce, followed by bubo, the skin over			

TABLE III. CONTINUED.

Complaint.	*Cause.*	*Treatment.*	*Result.*
which ulcerated and exposed a protruding gland, and subsequently by a papillary eruption over the whole surface of the body. The mercurial treatment removed the induration, œdema, bubo, and eruption . .	Connection	Pulv. ant. gr. ii. common poultice, merc. oint. ʒi. o. n.	Well.
Induration about healed ulcer of the prepuce without œdema, followed by bubo and eruption	Connection	Mercury . . .	Well.
Induration remaining after an ulcer, having all the peculiar marks of Hunterian chancre, had skinned over, but not connected with bubo or secondary symptoms. This case was, nevertheless, treated at the Locke with mercury, which removed the induration: the case was then pronounced cured	Connection	Mercury . . .	Well.
Induration without œdema about healed ulcer on the internal surface of the prepuce, in connection with bubo and eruption . . .	Connection	Mercury . . .	Well.
Induration about healed ulcers with papillary eruption . . .	Connection	Mercury . . .	Well.
Ulceration supervening upon an indurated cicatrix . . .	Connection	Mercury . . .	Well.
Ulcer with induration on the nympha	Connection	Mercury . . .	Well.
Desquamating tubercular eruption on an infant. It appeared four weeks and four days after birth; first on the face and then over the body. The mother, six weeks before delivery, was discharged cured of nodes, &c. The eruption on the child disappeared under the use of mercury .	Connection	Hyd. cum creta. grs. v. o. n. .	Well.

The first table shows that mercury was not used in excoriations of the glans penis with or without gonorrhea and condylomata; in small superficial ulcers on the glans and strotum; similar ulcers with bubo; large inguinal ulcers; bubo without previous sore or urethral discharge; ulcer of the penis consequent to sloughing of the glans by paraphymosis; sloughing ulcers; deep inguinal ulcers recurring after an irregular use of mercury; small ulcers remaining a length of time after a profuse use of mercury; large ulcers with healthy granulations; diseased frenum; chops and ulcers on the lips and in the mouth; warts on the penis; fissures; enlargement of the metatarsal bones; painful affection of the throat; vascular swellings on the cicatrices of rupea; and leprous eruptions extending into the meatus externus, and affecting the hearing.

These cases, admitted into an institution devoted exclusively to the venereal disease, and which were very numerous, received only general practice: viz. rest, position, diet, cleanliness, bleeding, purging, preparations of zinc, lead, nitr. silver, sulp. acid, blue and yellow wash, cerat. sapon. and calaminaris; decoc. sarsap., guaiac., dulcam., bark, iron, myrrh, &c.

The second table shows that mercury is a doubtful remedy in constitutions broken by previous salivations, acting quickly on such in small quantity causing profuse salivations, prostration of muscular power, a relaxed state of the body generally, rheumatism, pains, and a tendency to sloughing and phagedænic ulcerations.

The third table shows that mercury is useful in cases of cartilaginous indurations left about venereal ulcers which have skinned; in ædematous thickening of the prepuce; ulcers having a dry black slough at the edges and a whitish adherent smooth slough on the surface; ulcers supervening on a hardened cicatrix; ulcers with induration remaining after a sloughing off of the glans penis, caused by paraphymosis; desquamating tubercular eruptions; papillary eruption, united with a hardness about a healed primary ulcer.

To the cases derived from the London Locke Hospital I would add short notes of three occurring in Philadelphia, in which *mercury was indispensable.*

A case of chancre and gonorrhea, without bubo, in an irritable sanguineous constitution; followed in six weeks by an ulcer in the throat, and soon after by eruptions. The ulcers on the glans penis and in the throat were excavated, indurated, and covered with an adherent slough, and the eruption presented a desquamating enlarging copper

coloured blotch. This case occurred in 1826, in my private practice. The non-mercurial practice was employed six and a half weeks. The ulcer on the penis healed, and medical attendance was discontinued. The patient returned a few weeks after, having had no connection, with the sore on the glans in a state of ulceration and slough. Soon after an ulcer in the throat, and the copper coloured eruption appeared. Submitting my judgment yet to the prevailing opinion, I resumed the non-mercurial practice. The disease advanced. The mercurial treatment was then adopted, and the patient within two weeks was well. The gentleman, nearly two years subsequently, has been under my observation, and without any recurrence of the complaint.

In the year 1827 I attended a female in this city having extensive phagedænic ulcers of the lower extremity, which had existed more than three months. The aspect was venereal. The non-mercurial practice was faithfully employed, and with success so far as to heal the ulcers for a short time. These however resumed an ulcerative state, and additional ulcers appeared; showing the treatment to be only palliative. The mercurial practice was then adopted, and in a short time every symptom of the case disappeared. I saw this patient in Oct. 1828. She has had no recurrence.

A third case in which mercury was demanded, and without which the cure could not have been expected, happened in the venereal wards of the Philadelphia Alms House, under my care, as a resident student. There was an alternate sloughing and hemorrhage of the penis. Two sloughs and intermediate successive hemorrhages had taken place under the non-mercurial practice. A third slough was forming when a mercurial treatment was commenced. The mercury no sooner affected the gums, than the penis ceased its sloughings and hemorrrhage, and permanently healed. This last case is one, of several in the venereal ward, intentionally subjected to the non-mercurial and mercurial practice which agitated and divided the medical public during the years 1818 and 1819, and subsequently.

ARTICLE VII.—*Cases of Peritonitis, with Remarks. By* HUGH L. HODGE, M.D. *One of the Physicians of the Alms-House Infirmary.*

Morbid anatomy has greatly illustrated pathology. It has several times brought to light extensive consequences of a disease, whose existence even had not been previously suspected, and has often demonstrated the frequency of a complaint which had been thought very rare. Peritonitis has been detected in many cases by the knife of the anatomist, where its occurrence had escaped the suspicions of the mere practitioner, and is now therefore regarded as a more frequent complaint than had hitherto been supposed. Many individuals have no doubt perished from this and other inflammatory affections, whose death has been attributed to *debility*.

These errors arise from an imperfect diagnosis. There are no symptoms peculiar to either acute or chronic inflammation of the peritoneum, and as the physician must form his opinion from the group of symptoms presented, so he is liable to be deceived even in the acute forms of the affection. Thus, Dr CHAPMAN has informed me that two of our most observant and experienced physicians for a long time attended a lad for peritoneal inflammation, whose body after death presented no evidences of such an affection; the pleura and lungs having been the seat of irritation and disease. I have met with several severe cases of apparent peritonitis, with swelling, tension and pain of the abdomen, decubitus on the back, dread of the least pressure, even from the bed clothes, which proved to be a rheumatic affection of the integuments. On the contrary, when peritonitis has actually existed, the symptoms have sometimes been so obscure or complicated, as to cause it to be mistaken for colic, diarrhea, dysentery, enteritis, &c. In chronic peritonitis the signs are still more deceptive. I have been called in consultation by a respectable physician to a case of this character, which had been for months treated as ascites; and in this and in many other cases dissection has revealed the most extensive inflammation of the peritoneum, with sero-purulent effusions, and universal adhesion of opposing surfaces where no suspicion of the disease had existed during life. The reverse I have also found to be true, that the practitioner who, during life, has suspected from the peculiar combination of symptoms, a chronic inflammation of the abdominal

cavity, has in vain searched for the consequences of such inflammation after death. "A very obscure variety of peritonitis is one which is only indicated by a tumefaction of the abdomen, joined to habitual constipation and to sensibility without fluctuation. A more obscure degree is that in which there is swelling, with only occasional constipation: and finally, peritonitis has been announced merely by a simple tumefaction [ballonement] of the belly*." It is needless to observe how wholly insufficient are such symptoms to identify the nature or seat of an abdominal disease.

There is still another source of deception respecting the diagnosis of peritonitis, arising from its not unfrequent complication with inflammation of the mucous membrane of the bowels, particularly of the large intestines. At our infirmary I have met with several cases in which the acute form of peritonitis has suddenly supervened on chronic inflammation and ulceration of the intestines. Such cases are exceedingly distressing from the agony to which the patient has been usually subjected, and proving speedily fatal, have afforded the opportunity by dissection for understanding the true condition of the tissues involved. In other instances the phlogosis of the serous membrane has been the primary disease, while the affection of the mucous tissue has accidentally supervened. But in *chronic* affections of these membranes, whether resulting from a common cause or as consequents the one of the other, I should say, from the observations I have made, that the symptoms of enteritic disease are alone prominent; those of the peritoneal affection seldom attract attention, while the former is comparatively a manageable disease, and the latter in its confirmed state is almost incurable. "Peritonitis, whether acute or chronic, particularly the latter, is of all complaints the most fatal"†. In treating therefore abdominal inflammations, it becomes necessary to ascertain if possible all the tissues which are involved; for it may happen, as will be presently exemplified, that the inflammation of one tissue may be subdued, while that of another remaining may destroy the patient. If the diagnosis be difficult, and the disease usually fatal, greater attention to minutiæ is required, that by an early detection the proper time for the successful employment of our powerful the-

---

* Dict. abrigé des Sciences Médicales.—Art. Peritonite, p. 467.

† Op. cit. p. 468.

rapeutical agents may not be irremediably lost. Inflammation should be considered as a curable disease, and however difficult its management may be rendered from the circumstances of the case, the scientific physician should not despair in his attempts to discover its insidious approaches or to arrest its progress.

In confirmation of some of these remarks, I shall adduce two cases very analogous to each other; one of which I have the pleasure of presenting in detail; the account having been drawn up by Dr Nott, house physician to the infirmary during my superintendence, from notes taken at the bed side of our patient. One or both cases would appear to confirm some important facts in the history of peritonitis, and to afford matter for reflection.

1. That peritoneal inflammation may exist unsuspected: there is reason to believe, that in both the following cases, this inflammation had preceded the mucous affection, which last first induced the patients to apply for relief.

2. That severe and dangerous inflammation in the mucous and serous tissues of the intestines may co-exist.

3. That enteritic tympanitis is intimately associated with, if not a necessary attendant on, peritonitis; it forms a very important diagnostic mark.

4. That suppuration may occur on a serous surface without ulceration; the pus having a "laudable" character.

5. That the pus may in these serous tissues be circumscribed by adhesions, and the abscess thus formed may, as in ordinary cases, advance by progressive absorption to the surface of the body or open into an adjoining intestine.

6. That ulceration may commence originally in a serous tissue; a point doubted by some pathologists.

7. That the peritoneal inflammation may continue its ravages while the mucous inflammation may be arrested or even subdued; and this without any very positive indications.

8. That the sympathies are so little excited in chronic peritonitis, that the inflammation may pass through its different stages, so that gangrene may result before the patient is destroyed.

9. That in a therapeutical point of view, the local application of cold promises to be useful as a palliative, if not as a permanent remedy. No measure was effectual in relieving the pain in Graham's case until cold was resorted to.

Case 1*st* was that of a mulatto man, about thirty years of age, of a delicate constitution. He attributed his illness to exposure to wet and cold; and some days after the commencement of his complaint was brought to the infirmary. He then complained of the usual symptoms of dysentery. His abdomen being however enlarged [tympanitic] and painful especially on pressure, the patient was treated by means of cathartics, anodynes, and demulcents; the symptoms greatly ameliorated, and he appeared convalescent. In this situation, contrary to advice, he left the infirmary and returned to his usual mode of living. He however was, in a few days, re-admitted into the institution, and again treated as suffering from dysentery. He complained of severe griping pains, irritation of the rectum, tenesmus, with frequent inclination to stool. The discharges per rectum were however peculiar; presenting the appearance of yeast in colour and consistence, as if a large quantity of sero-mucous fluid had been evacuated without any admixture of bile or fæces. The abdomen was tympanitic, and pain was excited by pressure. By the use of alteratives (calomel, ipecacuanha, and opium in combination), and laxatives, assisted by cold affusions to the abdomen and blisters to the lower extremities, the symptoms of mucous irritation were again subdued. The stools became bilious and feculent, and there seemed to be no reason why the patient should not recover. He remained however weak and miserable, was much emaciated, without appetite, had a slight paroxysm of fever in the afternoon; the abdomen was tympanitic, but not painful, except when much pressure was made. In this state he continued with little apparent alteration for several days; his strength however gradually diminished, and he died.

On dissection there were evidently some vestiges of mucous inflammation; but bilious fæces were found in the intestines, and there was nothing in this tissue sufficient to account for the death of the patient. The peritoneal surface however was universally inflamed; lymphatic depositions connected all the viscera of the abdomen; while pure pus was found in circumscribed cavities among the convolutions of the intestines, and the folds of the mesentery. In the latter situation a large abscess was formed. Several portions of the peritoneum were of a dark or livid colour and easily torn, as if in a gangrenous condition.

Case 2*d*, as detailed by my friend Dr Nott. "Edward Graham, an Irish labourer, ætat. 30, of intemperate habits, was admitted on

the 19th of June, 1828, with mania a potu threatening. Pulse at that time was a good deal excited, tongue a little furred, slight headach; was ordered a dose of calomel and jalap, which he said purged him freely; after this he was sitting up and was thought to be convalescent, until the evening of the 21st, when he was seized with sharp pains in the abdomen, and a frequent disposition to stool without being able to evacuate any thing—abdomen was a good deal swollen. These symptoms were attributed to some impropriety in diet, and thinking the case nothing more than a common colic, without further examination, calomel. gr. x., pulv. opii, gr. i. were prescribed.

22d. He was a good deal better, but still complained of his abdomen, which on examination was found to be very tender and considerably swollen; pulse frequent, full and soft; tongue more foul; skin rather warm and dry; bowels not opened by the last medicine. Ordered cups to abdomen. ℞. Calomel. gr. ii., pulv. opii, gr. ss. —M. Cap. q. b. h.; also common enema.

23d, 8 o'clock, A. M. No improvement; skin hot; face flushed; pulse frequent, open, with slight tension; tongue of a dirty cream colour, brownish and dry in centre, edges florid; abdomen still swollen and tender. Ordered calomel, ℈i. to be followed by oil till bowels are freely opened, 60 leeches to abdomen, and warm fomentations.

3 o'clock, P. M. No relief; had two stools; pain in abdomen acute; compared it to knives running through him; pulse more tense; skin very hot. Ordered venesection; bore only ℥viii, which was cupped and buffy; enema and fomentations repeated.

10 o'clock, P. M. Better; has been perspiring freely; bowels well opened; stools copious, soft, feculent and offensive; pulse 104 and full; abdomen slightly relieved. Ordered 60 leeches and an enema of senna and salts; fomentations continued.

24th, 9 o'clock, A. M. The injection given last night brought away four or five copious stools; feels considerably relieved this this morning; pulse and skin nearly natural; tongue much the same; diet gruel.

3 o'clock, P. M. Not so well; pulse more frequent and tense; abdomen again quite tender. Ordered 60 leeches and fomentations.

10 o'clock, P. M. Considerably relieved; had several stools during the day.

25th, 9 o'clock, A. M. Improving; pulse pretty full; has a little tenderness of abdomen; *tongue still foul.* ℞. Calomel. gr. x., comp. ext. coloc. gr. x.—M.

10 o'clock, P. M. Medicine did not operate. Was ordered during the afternoon an injection, which opened his bowels several times; tongue the same; pulse irritated.

26th. Appears to be a good deal better; tongue cleaner; has little tenderness remaining; thinks himself well, and contrary to advice persists in leaving the house: he took his discharge and went out.

30th. Admitted again after being out four days; most probably has been eating and drinking imprudently, although he denies it; has acute tenderness on right side of umbilicus; abdomen swollen, particularly at the part where the tenderness is seated*; pulse 88, small and tense; tongue clean and florid at the edges; skin natural; has a cough; has had since his discharge frequent slimy stools with griping. Ordered 80 leeches to pained spot.

July 1st. No better; abdomen very tender; tongue covered with a cream coloured fur; skin cool; tormina and tenesmus, but no stools; pulse quick and tense. ℞. Calomel. gr. x.; to be followed by oil.

2d. Bowels were freely opened yesterday; pulse frequent, quick, and tense; skin not hot, but has a husky feel; appearance of tongue and tenderness of abdomen much the same. Ordered forty leeches and fomentations.

Evening. Not so well as in the morning; pulse 100, small, quick and tense; skin hot; abdomen very tender. Ordered affusions of cold water on abdomen and injections of cold water; heat of skin and pulse was reduced by the cold, and he felt better after it.

---

* I would remark that the general cavity of the abdomen was but slightly swelled in this case, but that an ovoid tumour formed below and to the right of the umbilicus, presenting to the eye the appearance of an abscess formed among the muscles, but on examination by percussion and with the fingers, the swelling evidently depended on gas in the bowels. This tumour was the seat of the patient's severe sufferings, and in my clinical remarks, I mentioned to the pupils in attendance that I considered it a case of peritonitis, in which adhesions had occurred, in all probability causing the accumulation of air, and that there was reason to suspect an abscess would form.—H.

3d. Much the same this morning; had several watery stools during the night; cold water continued. Ordered blisters to ancles, and ipecac. gr. ¼, q. b. h.

4th. The blisters yesterday produced so much excitement that it was found necessary to remove them before they had fully drawn; feels better this morning; pulse 99 and quick; tongue the same; abdomen not near so painful to the touch, but is still protuberant; skin good; stools more consistent and natural; cold and ipecacuanha continued.

6th. Improving; little or no tenderness of abdomen remaining. Treatment continued.

7th. The swelling of the abdomen is becoming conical in form, pointing near the umbilicus; has a tympanitic sound on percussion, and when kneaded the gurgling of air is heard in the intestine; pulse irritable. Ordered a blister to the tumefied portion of the abdomen.

9th. Still complains of frequent inclination to stool; discharges very small and slimy. Ordered calomel, gr. x.

Patient is becoming feeble; allowed milk and chicken water; diet heretofore has consisted almost entirely of gruel and gum water.

20th. Has been lingering ever since the 9th without any material change in symptoms. Abdomen until yesterday remained tense and pointed. Dr Hodge thinks that an abscess has formed in the peritoneum; two blisters have been applied successively without any marked effect; pulse has continued irritable; febrile exacerbations in the evening; small and frequent evacuations from the bowels; tonics, astringents, and opiates have been given without any advantage. Yesterday afternoon the tumour of the abdomen subsided; patient says that he had at the time a considerable discharge of fluid and flatus, but as the stools had been thrown away by the nurse without examination, it could not be ascertained whether or not they contained pus.

He is now taking porter and diet to support his strength; all the astringents have failed in checking his bowels; he is now using burnt brandy and galls.

27th. Although the swelling of abdomen subsided on the 19th, a circumscribed hardness remained, extending for several inches around the umbilicus. An opening formed yesterday at the umbilicus, through which during the day about a pint of pure pus was dis-

charged, according to the account of the nurse and patient; the discharge is now trifling, and the patient would be pretty comfortable if it were not for his diarrhœa and a cough which increases with the debility. Ordered injections of sulph. zinc. gr. x. in half a pint of water, to check bowels.

29th. Slept pretty well last night; cough getting worse, and expectoration more difficult, owing to increased debility. Hectic paroxysms followed by copious perspiration; discharge now about 2 or 3 ounces daily; had 2 or 3 stools during last twelve hours. Ordered elix. vitr. gtt. x. t. in d., wine whey, and volatile liniment to breast.

30th. Gradually sinking; discharge from umbilicus of a greenish hue and very offensive—on pressure it comes out, mixed *with air and the contents of the intestine.* Treatment continued.

August 1st. Died.

Dissection.—On opening the abdomen, appearances of extensive chronic peritoneal inflammation were seen. The peritoneum every where presented a leaden hue; pretty firm adhesions had formed between the folds of the intestines, between the omentum and intestines, and between the liver and peritoneum lining the diaphragm, &c.; the omentum and small intestines, just behind the umbilicus, had become agglutinated, and were united at the distance of two or three inches around the umbilicus to the anterior parietes of the abdomen; a complete sac was thus formed which contained pus and feculent matter; the abscess extended as far up as the liver, and had but two openings, one at the umbilicus and another about the size of a crow quill, into the small gut; the sac was so perfectly formed that no pus was found extravasated amongst the intestines around it; five or six ulcers, about the size of a ten cent piece, were seen on the *external surface* of the small intestines, but *perforating only the peritoneal coat*, except the one communicating with the abscess; a little abscess was also found near the left groin, in the folds of the mesocolon, around which was poured out about a gill of pus. The mucous coat of the stomach showed some marks of chronic inflammation; that of the small intestines was perfectly healthy, showing the ulcers had commenced on the external or peritoneal surface.

The mucous membrane of the large intestine was extensively diseased; looked as if it had been corroded by strong acid, a great

portion of it being removed by ulceration; it was of a light chocolate colour, and much thickened.

N. B.—I think it most probable that the abscess opened into the intestine before it did externally; the smallness of the aperture in the intestine will account for the late appearance of fecal matter in the abscess."—N.

ARTICLE VIII.—*Observations on the Treatment of Fractured Patella, with some Attempts at its Improvement. By* HENRY BOND, M.D.

Read before the Kappa Lambda Society, February 25, 1829.

Surgeons have exercised their ingenuity not a little to devise improvements in the treatment of *fractured patella*. And when we consider how obvious and clear the indications are in such cases, we might naturally have expected, that the practice would have arrived at such perfection that complete success, in ordinary cases, would have been almost certain; especially when it is considered that an imperfect cure is very seldom a necessarily unavoidable consequence of the accident, but is to be attributed to the employment of means inadequate to an attainable end, or to their unskilful application.

The possibility of a bony union is now universally admitted; and it will not be contended that there is often any difficulty in bringing the fragments into contact. But fractures of the patella, according to the acknowledgments of all surgeons, are very rarely united by bone, the connecting medium being in almost all cases, says Mr S. COOPER, a fibrous ligamentous substance; and he ascribes this fact chiefly to the very great difficulty of maintaining the surfaces of the fracture in complete contact, and perhaps in some measure to the ligamentous or tendinous structure of the adjacent and intervening parts. BOYER says, "strange as it may appear, the bones cannot be kept in contact; the apparatus constantly gets loose, and cannot be changed often enough to prevent this effect from taking place." Mr JOHN BELL says, "to preserve the bones

(fragments of the patella) in absolute contact, and prevent this imperfection in the cure, is almost impossible." Mr CHARLES BELL says, "I believe it to be possible to make a cure by union of the bone, but the specimens of the new ligament in my collection will prove how difficult the attempt is, how often it fails."

This part of surgery being confessedly thus imperfect, the profession will, I trust, receive with candour any attempts to improve it.

The two chief indications are, 1. By the position of the patient to relax those muscles which are inserted into the patella. And 2. By means of a surgical apparatus to maintain this position, and to counteract the efforts of the muscles to separate the fragments.

Some authors have entertained the opinion, that a proper *position alone* was sufficient to effect a cure; and cases are related in the Memoirs of the Academy of Surgery, by SABATIER, where fractures of the patella were cured by an attention to this alone. Although we do not believe that treatment adequate to effect any thing more than an imperfect cure, it illustrates the importance of a careful attention to position. The joint must be completely extended, and retained there at least fifteen or twenty days, before any motion is allowed to the knee. BOYER says, he formerly taught that this joint should be moved early to prevent stiffness; but the fear of elongating or breaking the intermediate substance led him afterwards to a different practice. In general, he says, we do not permit our patients to begin to move the leg before the expiration of two months. The knee soon becomes flexible, and false anchylosis is never produced.

The hip joint should be flexid, and this may be accomplished either by elevating the body or by elevating the limb, or by elevating both at the same time. As the flexion must be continued many days, it should not be great. If it be such as to form an angle not differing much from one hundred and thirty-five degrees, it will produce the necessary relaxation of the *rectus femoris*, and be as easy a position as any for the patient; and it would be safest to maintain nearly the same angle during the cure. It may be necessary sometimes, for the comfort of the patient, to vary his position. He may be raised nearly or quite to a sitting posture; but, in so doing, the affected limb must be lowered to a horizontal posture. When he wishes to assume a recumbent posture, the limb must be elevated in a corresponding degree. The best ordinary posture

for him is to rest on two inclined planes, rising in opposite directions from the hips. The head and shoulders may be conveniently supported by placing beneath the bed or matrass a board, as broad as the shoulders, and long enough to reach from the hips above the head. Its proper elevation should be varied and secured by placing beneath it some support, which cannot yield and be deranged so easily as piles of pillows and blankets. The limb may be elevated by similar means, except that the board should be placed above the bed and covered with a folded blanket. This board is not, however, very necessary, as the elevation of the limb may be maintained by placing a support beneath the long splint with which the fracture is dressed. Particular attention should be given, that the foot receive its full share of support, and that it be not left hanging like a weight upon the end of a lever. If the limb and shoulders be both elevated at the same time, a moderate elevation of each will produce the requisite relaxation of the muscles; and, in all the changes of position, made for the comfort of the patient, the degree of flexion of the hip joint should be allowed little variation.

I suppose that the separation of the fragments does not depend so much upon the ordinary contractility or tenacity of the muscles (this being easily counteracted), as upon the sudden increase of it by some excitement. Every precaution should therefore be used to avoid this; and whenever the position of the patient is changed, he should not be allowed to feel the necessity of making any exertions either voluntary or involuntary. He should be moved in such a manner that he will not feel any apprehension of danger or accident. If he be allowed to assume an upright posture in bed by his own efforts in the ordinary manner, the *rectus femoris* will almost necessarily be called into action, and none of the ordinary modes of dressing would be likely to retain the fragments in contact. This should be considered a point of great practical importance by every one who expects to effect a complete cure; for, when any considerable time has elapsed, every separation of the fragments, although they should be immediately replaced, greatly lessens the probability of a bony union.

It would by no means answer as well to produce the relaxation of the *rectus femoris* solely by the elevation of the body of the patient, even if that position could be endured with the least inconvenience; for I consider the elevation of the limb a point of great practical importance on another account, besides the relaxation of

that muscle. It is one of the most efficacious means of avoiding or subduing inflammation and tumefaction, which are often objects of the most serious attention. In fractured patella the knee often suffers such violence, that for a considerable time, on account of the inflammation and swelling, we have no means left, besides position, for keeping the fragments in place. For this condition, which demands the most prompt attention, authors recommend "bleeding, and the usual remedies for inflammation." But none of them, as far as I know, reckon the elevation of the limb among the means of reducing the inflammation; although I would reckon it second to none in point of importance. For *preventing* inflammation where there should be much reason to apprehend it, I would give the limb a very considerable elevation, and allow the body to be nearly or quite recumbent; direct salts and sedatives internally; refrigerant and sedative topical applications; let the limb be unincumbered with bandages; keep the knee extended by means of a long splint, attached to the limb by four circular bands. I would not resort to blood letting to *prevent* inflammation, unless the condition of the system should demand it. If it should not be prevented by these means, I would join copious bleeding to the other remedies to *subdue* it. Boyer says cold applications "are particularly applicable before the accession of inflammatory symptoms." He says, "experience teaches us, that in the case in question, and in all similar cases, the immersion of the part in cold water is useful, and should be continued for several hours, the water being frequently renewed in order to keep it cold." But this treatment is not to be employed unless the surgeon see the patient soon after the occurrence of the accident. It is the opinion of the same author that leeches cannot, in the greater number of cases, be applied with safety, "for the irritation produced by their bites, added to that already existing, might bring on gangrene of the part, and the patient's death."

I concur in the opinion of Mr Latta, that "while there remains any degree either of swelling, pain or tension, we cannot apply a bandage with any degree of propriety; nor can we even do so while there is good reason to believe that it will come on." Boyer adopted the same opinion, and it appears to me much sounder than that of Dr Dorsey, who says, "care must be taken to cover *every part of the skin* with the roller, because any part which is not thus supported will swell and inflame." This treatment of Dr D. would

seem to me one of the most certain means of aggravating the inflammation. From BOYER's *Lectures on the Diseases of the Bones*, as edited by RICHERAND, it appears that he used a tight rolling bandage in his earlier practice; but on referring to his *Treatise on Surgical Diseases*, which was the result of matured experience, it will be seen, that he has wholly abandoned it.

Mr CHARLES BELL recommends a very slovenly, and what would seem to me a very inefficient practice; and it is not surprising, that his collection exhibits so many proofs of unsuccessful practice. He places the patient in a sitting posture instead of elevating the limb—places a neckcloth about the knee in the form of the figure 8, with certain "nooses," which it is not easy to understand—applies no splint to keep the knee extended, and, for the relief of the patient, when he is tired of the sitting posture, lays him on his side. This gentleman, in his attempts to simplify the treatment, has adopted a practice which, in my view, is little better than leaving it to nature, without the interference of art. Much less could be expected from it than from that recommended by B. BELL and LATTA. Had the straps recommended by these gentlemen been combined with a long splint of proper width, it would have constituted an apparatus scarcely inferior to any now in use.

BOYER points out very clearly and justly the useless and mischievous effects of a bandage applied in the form of the figure 8, which was in use, especially in France, until DESSAULT introduced his mode of dressing. He says, "the bandage in the form of the figure 8 causes a congestion of the foot and leg, by not compressing the whole limb. Besides, the action of this bandage is oblique, and much of it is spent in merely compressing the neighbouring soft parts, which it irritates, and sometimes excoriates; neither is this inconvenience remedied by the pasteboard trough. The part of its action which is employed on the fractured parts is *always insufficient to keep them in contact*, if the constriction be not greater than the patient can bear for any length of time. If, in order to avoid this disadvantage, the bandage be not drawn sufficiently tight, its object will be entirely frustrated and its application useless." These defects occasioned this bandage to be rejected, and led to the invention of another, which, he says, was *less objectionable*, and which is generally designated as DESSAULT's apparatus. It is essentially the same as that recommended by Dr GIBSON, except that this gentleman substitutes the figure 8 bandage instead of the two long

compresses, which DESSAULT passed obliquely round the limb above and below the patella. Although this apparatus of DESSAULT was a decided improvement upon the simple figure 8 bandage, we can never expect, according to BOYER and as I believe, by means of it to keep the fragments in contact, and consequently never expect to obtain a bony union—the cure will be imperfect. This apparatus was long ago abandoned by BOYER for one of his own invention, and which is, in his opinion, "more simple than that of DESSAULT, and more certain in its action." "Its advantages are, that it leaves the fractured part uncovered, so that we may judge at any time of its situation; that it exercises strong compression without endangering mortification; and that the straps may be loosened and tightened at pleasure without deranging the other part of the apparatus." I cannot here forbear expressing my surprise that the sound judgment of Dr GIBSON should allow him to adopt a practice which, in my opinion, ought to be obsolete wherever the writings of BOYER are known. It is liable to most of the objections which BOYER has advanced against the simple figure 8 bandage. The long bandage, with which the limb is enveloped, invalidates them very little. A figure 8 bandage, as broad as that of Dr GIBSON, will have no decisive control over the patella, even if it were not liable to be loosened and deranged. It might prevent any extensive separation of the fragments, but it would not keep them in contact. Very tight bandaging might have some effect in rendering the muscles of the thigh quiescent, if it could be made to maintain a uniform tension. But the taper form of the part, its variation in size, either from swelling, compression, want of exercise or emaciation, and the liability of the bandage to stretch—all these circumstances forbid us to expect to maintain that tension. If the bandage become too tight, too loose, or otherwise deranged, it cannot be adjusted without deranging the whole apparatus.

Dr DORSEY adopted the principles of BOYER'S apparatus with some modifications in regard to the simplicity of its structure, which, however, can scarcely be admitted to be improvements in point of utility. He adopts the practice which BOYER abandoned after mature experience—of enveloping the whole limb with a tight rolling bandage. To this practice I have already stated my objection. But it is to be particularly noticed, that the bandage, by which he proposes to "cover every part of the skin, so as to prevent swelling and inflammation," is not applied to the naked limb, but includes

the long splint with its cushions and compresses. It must be very obvious, that it would be impossible to give a uniform support to every part of the skin by a bandage so applied.

I entirely approve of the principles of BOYER's apparatus, for I believe them to be so just, that the only improvements which can be expected in the treatment of this accident must be some modifications of its construction; and these must consist, either in simplifying it so as to require less art, labour, or expense in its construction, or in making it more comfortable to the patient, more easy in its application, or more certain to make the principles of his apparatus effective.

The apparatus which I would employ consists of—

1. A many-tailed bandage,
2. A cruciform splint,
3. A rolling bandage, and
4. Four ribbons or strips of muslin.

1. The *many-tailed bandage* is not an essential part of this apparatus, for often the treatment may be better managed without it or any primary bandage. But it may be used where it is necessary to envelope the limb for the comfort of the patient, either on account of excoriation, the maintenance of a proper temperature, or to support a flabby old limb inclining to the œdematous. It may be made by spreading a piece of leather three or four inches wide, and as long as the splint, with adhesive plaster or glue, and then laying upon it a row of strips of muslin overlapping each other, and of a length suited to the size of the limb. The leather is to be placed next to the skin, so as to cover that part of the limb which is to rest upon the splint. The limb is then to be enveloped with the tails of the bandage, beginning at the ankle, and taking care to leave the knee uncovered. The advantages of this bandage, where bandaging is expedient, are sufficiently obvious.

2. To make the *cruciform splint*, take a piece of board three inches wide or more, and long enough to reach from the ischium to the ankle; slightly hollow it its whole length. Across the middle or directly opposite to the knee, but not on the concave side, nail a thin piece of board two inches wide and five or six inches long. Along the whole length of the hollow side of the splint nail a strip of thick bookbinder's pasteboard, from ten to fifteen inches in width, according to the size of the limb. Opposite to the knee, the pasteboard must be cut away on each side so as to leave a va-

cancy of four inches. This pasteboard I do not consider an essential part of the splint, but it may contribute to give the limb a more safe and comfortable lodgement. Cover the splint with folds of soft flannel or a bolster, so made as to give the limb an even support in all parts. Upon this lay the limb, keeping the heel elevated as already directed, when speaking of position.

3. The *roller* should be made of firm new muslin or linen, not more than one and a half or two inches wide, and seven or eight yards long. If it be wider, it will not act so directly on the part where it is necessary to apply the most power; and, as all the turns of it are oblique, it will not be so easy to apply it smoothly. When the fragments are brought together, previously to applying this bandage, give them a triturating motion, by which any surrounding soft part that may have insinuated itself between them may be removed; and by the crepitus or the sensation communicated to the hand, we may ascertain that the fragments are in contact. Unless a considerable time have elapsed after the accident, this trial will generally give less distress than the attempts to produce crepitus in most other parts. In bringing the fragments together, it is not necessary to make the muscles more relaxed by the flexion of the hip joint, than they are when the dressing is finished; for if we cannot bring the fragments together without this extreme flexion, we may very reasonably apprehend, that none of the ordinary contrivances will keep them in contact when the flexion is diminished. In some cases it may, perhaps, be necessary to reduce the tonicity of the part by those means which produce muscular relaxation. In bringing the fragments together, care must be taken, if the muscles be much relaxed, that the upper one be not brought so low as to occasion the ligament of the patella to double upon itself; for in this case the axes of the two fragments might be made to form an angle with each, as in the case of M. Lallement, reported in Boyer's surgery. If the fragments be allowed to lie as high as the ligament will permit, they will rest between the upper parts of the condyles, where they will be much more likely to retain their natural relation to each other, than if forced down opposite to the joining of the tibia and os femoris, and there would be less probability of any excrescences remaining on the articulating surface of the patella after the union of the fragments. After adjusting the position of the fragments, the roller is to be applied by carrying two or three turns of it below the lower fragment and above the

transverse part of the splint, so as to fix that portion. The rest of the bandage is to be applied by carrying it alternately above the patella and below the transverse part of the splint, and above this part of the splint and below the patella. There is very little danger that this bandage will slip or be deranged; but if any be apprehended it may be guarded against by inserting pins into it on each side of the knee. I see no particular need of a compress above and below the patella where the bandage passes; but there would perhaps be less danger of excoriation, if the parts were covered with strips of leather spread with adhesive plaster.

I have said that the width of the splint should be three inches or more, according to the size of the limb. I consider an attention to this point of very considerable practical importance, although Dr Dorsey seems to have viewed it as a matter of indifference. 1st, If the splint be as wide, or a little wider than the knee, it will prevent the bandage from acting on the side of the joint, so that nearly the whole force with which it is applied will act on the proper point, instead of being wasted on the adjoining parts, and the bandage will consequently require to be applied with less force. 2d, It will prevent pressing much on soft parts which by their yielding will render the bandage more liable to get loose. 3d, The bandage will not press upon the lateral parts of the joint, so as to interfere with the circulation throughout the limb.

4. *Four ribbons, or strips of muslin* twenty-five or thirty inches in length, are required to be carried around the limb, including the splint, and be tied—two above the knee and two below. With the observance of the directions which I have given concerning the position of the patient the dressing is finished. Although I have said that it is unnecessary to make any extraordinary flexion of the hip joint at the first dressing, it would probably be safest to increase the flexion whenever the roller requires to be removed or exchanged.

The advantages of the *cruciform splint* are,

1. The simplicity of its structure and its easy application.

2. The very little liability there is, that either the splint or bandage will be deranged.

3. It may be applied so firmly as to accomplish pretty certainly the chief indication, without interfering with the circulation of the limb.

The pain which the patient will suffer for a few hours after the

application of this dressing, is, I believe, unavoidable in any efficient treatment of this accident; but it is neither more severe nor protracted than that unavoidably suffered in the treatment of some other fractures; and we must encourage the patient to bear it in the hope that it will not be of long duration.

I have had only one opportunity to test the efficacy of the treatment here recommended. In the spring of 1823, I was called to Hannah Saunders, more than forty years of age, who had fallen in the street and fractured the left patella. She supposed it was occasioned by falling on the edge of a brick. It was dressed with a cruciform splint, and treated according to the principles advanced in this paper. I have seen the patient within a few days and examined the knee. I could not detect any deformity in the patella; there is no lameness in it, and she performs complete flexion and extension (squatting down and rising up) without the least inconvenience. I have no reason to doubt that bony union has taken place.

ARTICLE IX.—*Of the Causes which retard perfection in the Healing Art. By* A. MATTHEY, M.D. *of Geneva, the Academies of Dijon, Turin, &c. To the Kappa Lambda Society of Philadelphia. Translated from the original French by* D. THEODORE COXE, M.D.

The curious changes which have taken place in the healing art consequent to the different revolutions in medical theory, i. e. the mode of considering the principle or nature of diseases, are well known; as are also the striking opposition and contrast in their treatment, produced, from the days of GALEN to the present time, by the humoral, mechanical, and chemical doctrines, and especially among the more modern by those of BROWN, TOMASINI and BROUSSAIS.

In coolly examining these perpetual differences of opinion, these continual contradictions, we readily perceive why profound thinkers have estimated medical science differently from theorists: we at

least perceive why medicine is, of all the branches of natural history, the most uncertain in its progress, the slowest in its march, and the oftenest retrograde: why discoveries in physiology, which at the first glance are the fittest to enlighten pathology and perfect the healing art by seeming to raise theory upon solid, immoveable bases—why I say, new physiological views, by exerting in their turn an exaggerated influence upon therapeutics or the curative process—injure even in this way, more than they serve, the advancement of the healing art.

In fact, in medicine as in politics, one excess always leads to its opposite. The rage for shedding blood which seized upon all fanatical heads by the discovery of HARVEY, gave way to an excessive fear of bleeding. They ended by banishing its use; and even in those cases where its efficacy had been recognised and established by long and wise experience, tonics and excitants became in their turn the dominant, exclusive curative means. BROWN succeeded BOTAL. In our day, the exaggerations of the phlebotomising physicians have reappeared; leeches have merely been substituted for venesection. It is easy to foresee the approaching fate of these new excesses.

Already are restored to light the forgotten opinion of VACCA, and the experiments of THOMSON, WILSON PHILIP and HASTINGS on inflammation:—physiological experiments tending to prove that phlogosis is the product of atony in the capillary vessels, and consequently that tonics are antiphlogistics *par excellence*—an opinion which Dr PRIDGIN TEALE has just undertaken to confirm in his experience. He has employed, he says, with continual success, the sulphate of copper in acute as well as chronic ophthalmia, turpentine in puerperal peritonitis, calomel and quinine in inflammations of the bowels and brain. He is led to believe from repeated observations, that sanguine depletions, local and general, are very often useless, and frequently injurious in most of these inflammations.

I ask—what opinion can a reflecting man form of the progress of medical science when he daily sees new conflicts arise upon subjects the longest debated, upon the nature and treatment of the morbid affections which seem best known, at least most studied? What confidence can he have in the healing art, when he sees the most striking contradictions in the opinions of physicians at the bed-side of a patient, when they are to apply a remedy to his dis-

order? Why is there so little understanding among physicians? Whence is it that each sectary maintains his opinion with the weapons of intolerance and absolute power, as though he were infallible, as if the point in question were an article of religious faith intolerant of examination?

It must be confessed—the mania of excessive generalization of facts, the desire of being distinguished by the seductive eclat of a new theory, the infatuation of self-love, and the despotism of personal interest are the most powerful causes of the obstacles to the perfection of the healing art!

These obstacles have, I am aware, been long pointed out by excellent observers; I think it good however to designate anew these inevitable rocks—they must be constantly pointed out, for they are lost sight of the moment a new theory, or a new curative process appears above the medical horizon. The literal, the credulous, children, and the simple are the ready dupes of the learned, philanthropic and religious grimaces of an apt impostor; the honest, prudent and wise should continually unmask them; we must not be imposed upon by the babble and dogmatic tone of theorists; after having heard them speak, seen them act—it is by the effects alone of their curative process, we should test their doctrines: the sucessful are the good—now, each may be good in its turn, in certain circumstances.

We perceive what should be done to perfect the healing art, but we also perceive the obstacles which must first be removed; these obstacles in fact are inherent in the human heart: to surmount them we must first destroy the passions which give them birth—self-love and personal interest on one side, and on the other the fear of death and blind credulity its natural consequence. Hic labor, hoc opus est. The period however is more than ever favourable; the enlightened spirit of the age is inimical to imposture—it will second the efforts of conscientious, disinterested physicians, enemies of deception, sincere friends of truth; we must in fine avow frankly and openly, that medical science has its limits and its degrees of certainty. Why seek still to deceive one's self and others by culpable caution or pompous and vain promises? Why not imitate the good faith, reserve and moderation of naturalists and philosophers! In exposing our views and opinions, why exhibit a fear of seeing them combated or overthrown by new facts! Why be vexed at fresh observations which modify our own! Has not LAVOISIER re-

tained his portion of glory, spite of the discoveries of modern chemists? Is not the progress of medicine, like that of chemistry, gradual? Is it not the result of the notions and errors of our predecessors? Why contemn them? And on the other hand—why fear new lights? Did not VOLTA applaud his disciple BELLANI for combating by facts his theory of hail? Should truths, which have for their object the health of man, be less precious in the eyes of physicians than physical speculations? or, should their theoretical notions prevail in their minds over the generous sentiment of public good and humanity? No, certainly, it is hoped: the reflexions I have just made, in reading an article* of the Journal of Medicine, must assuredly have been already made by the majority of its readers; they must in time bring important results to the perfecting of the healing art, and to the general good. Theorists, henceforth moved only by the love of truth, will see without pain their doctrines submitted to the test of experience and judicious criticism: the results of different curative plans will be compared without prejudice—without party spirit. It is the only way to arrive at and appreciate their value, and point out with precision the advantages and dangers of their application. It is only thus we can succeed in giving to medicine the character of certainty and dignity appropriate to it.

Unprejudiced men—zealous friends of every noble and generous sentiment! to you it belongs to show, by your example, what harmony and disinterestedness in the citizens charged with assuaging our miseries may do for the good of humanity.

---

* Article in which the most moderate and judicious observations are treated with ignorance and critical prejudice.

ARTICLE X.—*Note on* MERAT'S *Remarks on a Paper on Lead Disease, published in the North American Medical and Surgical Journal, January* 1828. *By* R. HARLAN, M.D.

In the "Journal General de Medecine" for the month of July 1828, I perceive that the editor has done me the honour to translate my essay on the diseases produced by lead, published in this Journal for January 1828.

Appended to this memoir in the French journal there is a note by M. Le Dr MERAT, author of a treatise on "colique metallique." In referring to the article on lead colic in the "Dictionnaire des Sciences Medicales," we intended no offence to the author of the very valuable observations contained in it, but because we considered the article a fair representation of French practice.

M. MERAT appears to think that I should have offered more detailed observations on the disease denominated colica pictonum. Having carefully noted the peculiarities of the disease as observed in my practice, arising probably from corresponding peculiarities in constitution, in variation of climate, locality, &c. it appeared to me unnecessary to enter into a more particular detail of symptoms which characterise a disease so well known as colica pictonum. Such varieties as I have noticed occur more or less generally in all diseases, under similar circumstances.

M. MERAT reprobates in the strongest terms the administration of the *acetate of lead* in those cases of colic where the stomach of the patient rejects every thing introduced into it. The annotator remarks, "This salt, which itself causes the disease, given to cure it! We must confess that there is in this recommendation a subversion of ideas calculated to astound the imagination of the boldest practitioner. Unless we adopt the theory of HANNEMANN, who asserts, that a medicine susceptible of producing a disease, should be the proper one to cure it; we cannot conceive of a curative measure more in opposition with all received doctrines."

M. MERAT, in offering these remarks, has permitted his imagination to obscure his judgment. We believe he is too judicious a practitioner to be astonished at a doctrine so commonly acted on. Does not he himself advise the free administration of opium, a powerful astringent, in colica pictonum, a disease whose principal

character consists in constipation? Do not practitioners occasionally apply a blister to cure certain inflammations? Nux vomica taken internally in certain quantities will produce palsy and tetanus, yet I can speak with certainty of the beneficial effects of this medicine in these affections when properly administered. Excessive use of ardent spirits induces mania a potu: here too the bane will prove the readiest antidote. It will be recollected further, that I have not recommended the acetate of lead as a remedy for colic; but merely as a palliative in those rare cases of excessive gastric irritability in which all other remedies are useless; because rejected as soon as offered. Finally, in no case have I observed injurious consequences to arise from the administration of acetate of lead, when its use was clearly indicated.

Analytical Reviews.

ARTICLE XI.—*Beobachtungen über den Säuferwahnsinn oder das Delirium Tremens. Von Dr* GEORG BARKHAUSEN, *Zweytem Arzte am Kranken und-Irrenhause in Bremen. Pp.* 244, 8*vo. Bremen*, 1828.

Observations on the Delirium of Drunkards, or Delirium Tremens. By Dr GEORGE BARKHAUSEN, *Second Physician to the Hospital for the Sick and Insane in Bremen.*

But a few years have elapsed since the attention of the profession generally was first directed to the peculiar character of delirium tremens: much diversity of opinion still exists among its members in relation to the pathology of the disease, and in its treatment various and even opposite plans have been and still are pursued. In our own country, where the disease was early recognized, one class of practitioners, referring its cause to that indefinite state of the system which they term debility, trust its cure to ardent spirits, with other diffusible stimulants, tonics and opium; another class, considering it to be principally a gastric affection, treat it by emetics alone, and a third, with various views as to its nature, place the patients affected with it under the use of opium, in such doses and so long continued as to induce a sound sleep of some hours duration; while in some parts of Europe it has been treated by the same remedies as are adapted to an actual inflammation of the brain.

Were we to judge of these different modes of treatment from the manner in which they are individually spoken of by their respective supporters, we should be led to the conclusion, that the disease was to be removed with equal facility by either; but when we come to examine the statements which have been published of their compa-

rative success, we shall find, what might easily have been determined beforehand, that in this respect they differ essentially from each other.

In this city a large proportion of our most authoritative practitioners are in favour of the opium practice, as laid down in the very excellent paper of Dr COATES, contained in a former number of this Journal*, while others, equally respectable, pursue the emetic treatment.

With respect to ourselves, although we have been taught by experience to consider opium by itself, or in combination with ipecacuanha, as an essential remedy in the majority of the cases of delirium tremens, yet have we not in every case trusted to it alone, but previous to its use have invariably directed cups or leeches to the head, whenever symptoms were present that appeared to call for their employment; and during its exhibition have directed blisters to the back of the neck, cold to the shaved scalp, and occasionally sinapisms to the extremities. By this plan we have very generally succeeded in speedily restoring our patients to their accustomed health; in a few cases, however, either in consequence of our not having carried the depleting and other remedies to a sufficient extent, or from having resorted too soon to large doses of the opium, we are persuaded that the latter, so far from having been of any service, has actually accelerated the fatal termination. From these facts, therefore, we have been led to the conclusion that the opium practice, as generally pursued, is not, at least from the very commencement of the attack, equally adapted to every case of delirium tremens, but will in many prove actually prejudicial, and this in consequence of the disease in these instances being complicated with an irritated condition of the brain approaching, if not amounting, to actual inflammation. A similar opinion, but carried to a much greater extent than we are inclined to follow, is advocated by Dr BARKHAUSEN in the work which has been placed before us for review; and as the author professes to have drawn his conclusions from the result of numerous cases, and to have tested their accuracy, whenever the opportunity presented itself, by an examination of the appearances in the brain subsequent to death, we cannot, it is believed, on the present occasion, better occupy a portion of this de-

---

* See Vol. IV. pages 27 & 205.

partment of the Journal than by a concise but fair analysis of his peculiar views.

"Delirium tremens," Dr B. defines to be "that disease which attacks individuals only after a long continued habitual use of spirituous liquors; and is characterised by a disturbance of the functions of the brain and of the nervous system generally, occasioning absence of sleep, delirium, and delusions of the senses of a peculiar kind (hallucinations); frequently attended, also, by considerable tremor of the limbs, and sometimes by a disturbance of the vascular system, with fever; marked by a great tendency to collapse, and terminating favourably only by the occurrence of a critical sleep." —Page 5.

After a few unimportant remarks on the name of the disease, he proceeds to a consideration of its cause;—intemperance, particularly in the use of distilled spirits. This section is extended to an unnecessary length by an examination in detail of the various classes of society, trades, &c. in which delirium tremens has been found of most frequent occurrence; from this the following general conclusion is drawn. That the disease may occur in every individual who gives himself up to the vice of intemperance, and hence whatever rank or condition in life presents the greatest number of cases of the disease, it is from the fact that in such the vice alluded to prevails to the greatest extent.—Page 10.

That delirium tremens is produced, almost invariably, by an intemperate use of ardent spirits is proved by the fact of its very unfrequent occurrence in wine countries, compared to the very great extent to which it prevails in those places, and among that class of people, in which ardent spirits are extensively consumed. Dr B. also remarks in confirmation of this opinion, that in his own country, many individuals of the lower classes, who serve as labourers in the vineyards, drink daily great quantities of wine without their ever appearing to be affected with genuine delirium tremens, until the wine, which becomes after a period not sufficiently stimulating for their use, is exchanged for ardent spirits.—Page 7.

Slight attacks of the disease have frequently been observed by our author to result also from the long continued excessive use of beer, especially strong beer. In regard to the extent to which ardent spirits may be drank without producing delirium tremens, and the smallest quantity from which it may result, we are informed that no general rule can be laid down:

"I have seen it," remarks Dr B., "produced equally in indivi-

duals, who, from the use of great, or disproportionately small quantities of ardent spirits, almost daily, or but seldom, or perhaps never became intoxicated; still, however, in all these instances too much liquor, in relation to the constitution of the individuals, had been used. I have thus even seen persons affected with the disease, who had never been considered actual drunkards, because never intoxicated. The different degrees of irritability of constitution may, perhaps, occasion a greater or less, really constitutional, predisposition to it, though it cannot be properly said that any one has an innate predisposition to the disease—the predisposition itself being artificially induced by intemperance. Thus, the individual who, from his greater irritability of constitution, might readily become intoxicated, or affected with delirium tremens, cannot, any more than another who is endowed with less irritability, be said to be predisposed to the disease, so long as he is no drunkard; but should the latter be the case, then the extent of the irritability of the constitution can point out his greater or less predisposition, even while this predisposition is itself the result of intemperance."—Pp. 9, 10.

Ordinarily, habitual intemperance is considered as sufficient of itself to produce an attack of delirium tremens, without the occurrence of any exciting cause; frequently, however, according to Dr B. other accidental causes contribute to its production, as certain affections of the mind, particularly vexation, fear, terror, jealousy, indignation, &c. So, also, he conceives, any other disease with which a drunkard may become affected, will operate as an occasional cause, especially all mechanical injuries; and in general, every occurrence which disturbs the natural equipoise of the various functions, and changes the ordinary, physical and moral condition of the drunkard. These causes may even bring on the disease in individuals whose intemperate habits have been for a long time discontinued. This has been observed by Sutton as well as by Dr B. in several instances.

"There can be no doubt," remarks the latter, "that the sudden and entire relinquishment, either voluntarily or by constraint, of the use of ardent spirits, is also a legitimate exciting cause of delirium tremens, as Armstrong and several German observers have remarked: very recently professor Luders has noticed the same fact*, while it is doubted by Dr Lind† and others." Armstrong notices the case of a female in whom delirium tremens

---

* Historia Instituti Clinici per ann. I. et II. mod. A. F. Lüders.—Glückwuns. Programm zur Feyer des 50 jär. Jub. von. G. H. Weber, am 21 May 1827. p. 20.

† De Delirio Trementi, &c. Havniæ 1822, p. 68.

occurred in consequence of her suddenly relinquishing the use of opium, large quantities of which she had long been accustomed to take." Pp. 15, 16.

Our own experience has led us to a somewhat different conclusion from that of Dr BARKHAUSEN, we believe that delirium tremens never occurs without an exciting cause, and that this cause is, in almost every instance, if not in all, the sudden suspension of the use of ardent spirits in the habitually intemperate; this is also the conclusion of Dr COATES, in the paper already alluded to, whose opinions in regard to this particular disease, from the ample opportunities he has had of observing it, and the attention he has for many years paid to all the phenomena connected with it, carry with them very considerable weight. We cannot say that we have ever seen an instance in which delirium tremens occurred during the career of drunkenness; and even when it has made its appearance subsequent to an epileptic attack, during the treatment of a wound or fracture, or in the course of some other disease, we are convinced that it has always been in consequence of the patient having for a time laid aside, or been interdicted his usual potations. When not complicated with some accident or disease, we have generally remarked that the patients who have fallen under our notice, had been, for several days preceding the disease, in a state of complete intoxication, on recovering from which they have remained for a time, without again resorting to their accustomed quantity of ardent spirits, and under these circumstances it has been that delirium tremens made its appearance.

The attempt made by Dr B. to prove that the disease is more prevalent under certain peculiar conditions of the atmosphere, we pass by without comment. We do not think that he has succeeded in rendering the opinion even probable, and we know of not a single fact which would appear to give any support to it.

The description of delirium tremens contained in the fourth section of the present work, is in the general outlines extremely correct and striking; in filling these up, however, the author has laid down several symptoms, of more or less frequent occurrence, which we cannot say we have recognized at the bed-side; it is true that this may have arisen from our having studied the phenomena of the disease with less minuteness than Dr B. appears to have done.

Delirium tremens is divided into the acute and chronic, the idiopathic and symptomatic, and into the sthenic and asthenic. The

two first of these terms are used in the ordinary sense of the nosologists. Idiopathic delirium tremens is that which arises solely from intemperance, and is unconnected with any other disease or injury; the symptomatic is that which occurs during some other affection, or subsequent to a fracture, wound, &c. The last division, which Dr B. considers the most important, and upon which are founded nearly all his views in regard to the pathology and treatment of the disease, will necessarily occupy more of our attention.

The *sthenic form*, according to our author, is that which occurs generally in robust subjects, particularly the young, or those advanced in years, whose habits of intemperance have not been of long duration, who have a natural appetite, a good digestion, and are still possessed of some degree of constitutional vigour. In general, the first, and not unfrequently the second attack of the disease, are on this account, of a sthenic character.—Page 42.

The *asthenic form*, on the contrary, is that which the disease assumes in old worn out subjects, especially in those who have been habitual drunkards for many years; whose digestive and nutritive systems have been long in a morbid condition, and who have already perhaps suffered from attacks of the disease. So also every thing which produces upon the drunkard a debilitating effect previous to the occurrence of the disease, such as depressing affections of the mind, poverty; other diseases of a debilitating character, as hæmorrhage, severe diarrhœa, cachexies, &c. can impart to delirium tremens an asthenic form.—Page 52. The nature of the ordinary drink of the patient is supposed also to have some effect upon the form of the disease produced by it. Thus we are told that the use of genuine distilled liquors obtained from grain, and unadulterated, favours the production of the sthenic; and impure spirits, adulterated by foreign admixtures, the asthenic form of delirium tremens.

In both forms the disease passes through three different stages, which the author denominates *stadium prodromorum*, *stadium invasionis*, and *stadium acmes*.

In the sthenic form the *first stage* is frequently overlooked, in consequence of the rapid manner in which the disease makes its attack, the mildness of the symptoms, and its short duration. Sometimes the attack commences with an unusual volubility and boisterousness in the patient, frequently connected with great gaiety, still oftener with peevishness and a disposition to quarrel; in other cases

with sudden paroxysms of great anxiety and palpitation of the heart: "the patient often gnashes his teeth, and presses upon the region of the heart; the case may even be mistaken for one of carditis; or the disease is ushered in by an epileptic fit, with great determination of blood to the head, or by a vertigo almost approaching to apoplexy; or by an active hæmorrhage from the stomach, bladder, or nose." The symptoms may, however, be confined to "a singing in the ears, pain of the head, a sense of ebullition in the blood, (wallungen im blute), a feeling of uneasiness at the præcordia, with an inclination to eructation, without the power of satisfying it, &c. The tongue is often coated, but gastric disease is seldom very evident; the pulse is commonly quick, full, and even hard, seldom irregular or intermittent, and very seldom completely normal. The skin is often disposed to perspiration, but often in a contrary condition. The face is unusually red, the head hot; a very slight tremor of the limbs may sometimes be observed; more generally it is absent." At first the patient's sleep is not affected, then it comes on only late in the morning, and is often disturbed by anxious dreams; towards the close of this stage sleep is entirely interrupted. These symptoms, according to the greater or less violence of the attack, may continue for days, or even weeks. The disease has been known to be confined to this stage, but generally it passes into the *second*, marked by entire absence of sleep and the presence of hallucinations; in the sthenic form these have often one general tendency, or are marked by the predominance of a single passion or one fixed idea. The patients are tolerably manageable, but still exhibit some degree of obstinacy, and are more often gay than anxious and melancholy; they frequently imagine they hear rain, or a loud wind, and complain of heat of the head. Tremor of the limbs is either absent or exists only in a slight degree. The pulse is commonly upwards of 100, is often full and undulating (wogend), more frequently soft than hard. The tongue becomes more foul, the cheeks red, the expression of the countenance unsteady. The perspiration is often increased, and warm; but not always, and seldom to any great degree. Sometimes the disease does not go beyond this period, but it frequently passes to the *third stage*. "The hallucinations and delirium are now more wild; the patient is unruly, he can no longer, as heretofore, be retained in bed, but insists upon rising, and longs to follow his occupation; frequently he escapes from his attendants and wanders about. His restlessness

and anxiety arise to the highest pitch; the pulse is commonly still, full and accelerated, but frequently has a peculiar tremor, which may even give to it the appearance of irregularity. If no tremor of the muscles has as yet been observed, it sometimes, but not always, now comes on, but only in a slight degree; if it previously existed it still continues. The redness of the face and heat of the head remain. The perspiration is somewhat augmented. The duration of the two last stages is indefinite, but neither is apt to extend beyond three or four days."

The terminations of the sthenic form of delirium tremens are, 1. *In health.*—This may occur in any of the stages, but most commonly at the close of the third. It takes place sometimes spontaneously, without any medical aid. The recovery is invariably preceded by a good, natural, and continued sleep. Of what duration the sleep must be to eventuate in health cannot be determined; Dr B. however conceives, that a shorter sleep than from six to eight hours is of no benefit. "A soporose, agitated sleep, forced by the administration of powerful narcotics, may as certainly," it is observed, "terminate in death, as in the cure of the disease." We are informed that by attending to the natural course of the disease, it will always be found, that a decrease in all its symptoms gradually takes place previously to the occurrence of the sleep. When the latter has been of sufficient duration, the patient awakes perfectly rational, and in general without any recollection of what occurred during his sickness. "There now takes place a state of general enervation and sullenness, as after a debauch: the pulse still remains for a time full and undulating, but is natural in regard to frequency; the perspiration ceases, the tongue is mostly very foul; there is considerable thirst, no appetite; by degrees these gastric disorders cease, and the patient is restored to his ordinary health." 2. *In death.*—This occurs during the height of the delirium, in consequence of a sanguineous or serous apoplexy. Dr B. has observed this to take place either during the state of continued wakefulness, being preceded by convulsions, or during a deep sleep. In the latter case, he remarks that the apoplexy is peculiarly apt to occur when the sleep has been forcibly induced by large doses of opium, but no doubt also, he adds, when opium has not been administered. 3. *By passing into the asthenic form.*—This may occur in any stage, and is often produced in consequence of the occurrence of some debilitating cause, as a hæmorrhage,

diarrhœa, &c. and not unfrequently from a treatment too powerfully antiphlogistic in reference to the constitution of the patient, which may easily happen when the attack has been preceded by some disease which would appear to demand such treatment, as active hæmoptysis, pneumonia, &c.—Page 45 et seq.

The first stage of *asthenic delirium tremens* has many symptoms in common with that of the preceding form. But in general the patient complains more especially of an anxiety, which, in its phenomena, bears a great resemblance to that of hysteria, and is accompanied with a feeling of great uneasiness at the præcordia, with involuntary sighs and eructations. There are commonly many symptoms of gastric disease, as vomiting, loss of appetite, diarrhœa, acidity, flatulence, great foulness of the tongue, pains of the stomach, &c. These both precede and accompany the disease. There is little redness of the face, and less heat of the head: the perspiration is profuse, and generally, even at this stage, there are severe tremors of the limbs and a small pulse; the latter is frequently very much, and in some instances not at all, accelerated. According to our author, this form of delirium tremens is never confined to the above stage but always passes into the second, marked by absence of sleep, and a peculiarly anxious delirium; the hallucinations are very various and of the most motley appearance; the ideas wander in every direction. "In the expression of the countenance, is strikingly depictured the peculiar mixture of anxiety, embarrassment and a more cheerful temper, experienced by the patient, as well as his attempts to conceal what passes in his mind." In his demeanour he is more compliant than in the preceding form. The pupils have appeared in some cases to be contracted. The perspiration and tremor of the limbs increase, or if not previously present, now come on, and are to a much greater extent than in the sthenic form. Symptoms of determination to the head are either absent, or very trifling. The pulse is smaller, more tremulous, and difficult to be accurately examined. Its frequency is evidently augmented, but in a few cases the previous frequency is now removed. The third stage differs from the preceding only in the greater violence of all its symptoms. The delirium is more fluctuating; the ideas, if possible, more wandering; the restlessness and anxiety increase, most commonly, every hour. The tremor of the muscles is so considerable that the patient, like one intoxicated, cannot walk unless taking hold of some object, and with difficulty

protrudes his tongue when desired. Subsultus tendinum now comes on. The perspiration is profuse and cold; the tongue becomes more loaded; the pulse is always small, and often so frequent as no longer to be counted, or is so weak that it is impossible to distinguish between its motion and the constant tremor of the muscles. In the lineaments of the face is strongly expressed the danger of an approaching collapse; frequently vomiting and purging occur. Asthenic delirium tremens may terminate, 1. *In health.*—Dr B. never saw a case in which this took place excepting by the aid of appropriate remedies. As in the preceding form, it occurs here, also, only by the intervention of sleep, preceded by a gradual decrease in the violence of the symptoms. Subsequent to the removal of the peculiar phenomena of the disease, there remains a state of enervation and depression; and the morbid condition of the digestive organs requires that the patient should still continue under medical treatment. 2. *In death.*—"Whether," remarks Dr B. "the determination of blood to the head is, in the asthenic form of delirium tremens, ever so considerable as to produce sanguineous apoplexy I must be allowed to doubt: I have never observed such a termination, and am not convinced even of the possibility of its occurrence. Almost in every instance, death is in this form the consequence of exhaustion;—of paralysis of the brain and nerves, commonly without sleep having been induced, notwithstanding fruitless efforts have been made for that purpose, but also occasionally after the patient has actually slept."—Page 53 et seq.

Chronic delirium tremens may be attended with symptoms inclining either to the sthenic or asthenic form. The patient appears sometimes disposed to sleep, but his sleep is never of sufficient duration to counterbalance the previous want of it. Occasionally he sleeps during the whole night and awakes in the morning rational, but soon relapses, for a long time, into the state of watchfulness, and the previous delirium again returns. Dr B. has seen this form of the disease terminate fatally with all the symptoms of nervous fever, sometimes with an organic affection, particularly of the liver and lungs, and a consequent dropsy. "Frequently," he remarks, "the disease loses its peculiar character and terminates in actual mania. Armstrong mentions that he has observed this once, and I have seen it much oftener."—Page 58.

We can neither spare the room, nor have we the inclination to enter into any detailed examination of the correctness of the forego-

ing division of delirium tremens. We admit without hesitation, that when the disease occurs in certain constitutions, particularly the young and robust, its symptoms are in some degree modified, and that it requires under such circumstances, in the commencement of the case at least, a treatment somewhat different from what it does when occurring in those who have been, as it were, worn out by many years of intemperance. We believe, however, that the disease is the same in both cases, it being merely complicated in the first with a certain condition of the brain, which it is necessary to remove, before opium can be administered with safety, to such an extent as to procure sleep, the occurrence of which, it is conceded on all hands, is essential to the cure of delirium tremens. To the terms sthenic and asthenic, as they are employed by Dr B., we profess to be entirely averse.

We pass by what the author has said under the heads of prognosis and diagnosis, in which we find nothing worthy of any particular remark, with the exception, that in regard to the former, Dr B. would appear to consider delirium tremens more generally of a fatal nature than experience has taught us to view it in this country, where under an appropriate treatment, in most cases, a favourable termination is very readily procured; nor can we accede to the justness of his remark, that in the first attack the prognosis is much less favourable than in the second, or more particularly in the third.

In the next section, entitled "Epikrise," are contained the views of the author on the pathology of delirium tremens, which are introduced by a summary of all the morbid appearances he has met with in the bodies of those who had died by this disease. These appearances were as follows: 1. When the disease had been of the asthenic form, he discovered in one instance a very striking emptiness of the vessels of the brain, but more frequently the diminution in the quantity of the blood was less considerable: the blood vessels augmented in size were moderately filled, particularly the veins—but no symptoms of actual engorgement presented themselves. The arteries did not appear to have taken any separate share in the disease—there being no appearance of abnormal vessels—no unusual fulness of the capillaries—no serous effusion—no recent exudation of coagulable lymph. The sinus of the dura mater, and the veins which empty into it, morbidly enlarged, were, however, distended with blood. In one instance the latter were found augmented in size in their whole extent; "from their origin in

the substance of the brain, in their course through the arachnoid membrane, until their termination in the sinus, they were frequently of the size of a crow quill, while those on the inner surface of the ventricles were as thick as a common pin; others appeared to be partly varicose, so that the brain presented when cut into, an appearance as though it had been pierced with small holes. Sometimes the brain had a firm and tough texture as if it had been soaked in spirits. Whenever there was a deficiency of blood the colour of the brain was unaltered; when the vessels were filled, the medullary portion was of a yellowish colour and the cortical of a clayey appearance. The arachnoid membrane, particularly at the upper part of the brain, was somewhat thickened, sometimes even opaque, and here and there, especially along the upper edges of the hemispheres, on both sides of the falx cerebri, was beset with granulations of lymph, which from their firm consistency, had evidently been effused for a considerable time. The pia mater was not strikingly increased in redness. The plexus choroides contained in some places small hydatids. Some of the bones at the basis of the skull, particularly the sella turcica, were found in a condition approaching to caries, or at least were of an unhealthy appearance." —Page 68 et seq.

The foregoing morbid appearances Dr B. does not consider as the product of the last attack of delirium tremens, but to have existed for some time previous to its occurrence; they have been found, he remarks, in the brains of drunkards who have died of tabes, and who had never suffered an attack of delirium tremens, as well as of those who have not been drunkards, and had not even been affected with an acute disease of the brain, nor any other from which their production could be anticipated. In many cases of delirium tremens also, they are entirely absent. "I consider them," he adds, "as the product of a repeated morbid irritation of the brain, caused by the use of ardent spirits, and of the invariable consequence of such irritation, a congestion towards the head. It is true that this irritation leaves behind it no very perceptible traces in the brain, until it has been frequently repeated;—from the derangement, however, it produces in the brain, at first functional, but by a longer continuance, or more frequent repetition, organic, it is probable that the predisposition to delirium tremens is produced; hence it is indifferent, as it regards the occurrence of this disease, whether these evident alterations of structure precede or not, as they are in some degree to be considered the

material evidence of an existing predisposition (als materiellen ausdruch der vorhandenen disposition). In young subjects, who have not been long addicted to intoxication, the alterations alluded to escape our senses, but this is seldom the case in old drunkards." —Pp. 75, 6. Dr B. conceives that the predisposition arising from this functional or organic derangement of the brain, explains the manner in which delirium tremens, particularly the symptomatic, may be induced even in individuals who have for a considerable time renounced their habits of intemperance.

2. In the sthenic form of the disease, besides the morbid appearances already described, but to a greater extent, were also found, general turgescence of the capillaries, as well venous as arterial, particularly an overfulness of the abnormal vessels formed in the arachnoid membrane, the smallest and most delicate arteries of which appeared to approach in size to the largest of the veins, which latter were also greatly augmented in number and size. There was often reddening of the pia mater and substance of the brain, from the great amount of their minute blood vessels, filled with blood of a bright red colour. Beneath the more or less opaque arachnoides were frequently found many ounces of a clear serous exudation; the same was also found in the cavity of the ventricles and at the basis of the cranium. Dr B. never met with any traces of recently effused coagulable lymph. In one instance the carotids in their whole extent presented an inflammatory redness of their inner membrane. The foregoing evidences of an increased activity of the blood vessels within the cranium are presumed to have been produced during the last occurrence of delirium tremens, but so far from having constituted its cause, it is supposed to be far more probable that they were produced during, and as an effect of, the last attack.—Page 71, et seq. They are believed to partake more of the character of congestion than of inflammation. "Where, however," says our author, "the limits are to be drawn in these cases, between congestion and inflammation I must leave undetermined. Dr ANDREÆ* represents the increased activity of the vessels of the brain and its membranes which occurs in delerium tremens, as an *asthenic inflammation*, which idea may, in many cases, be perfectly correct, but it certainly admits of no general and

* Hufeland und Osann's Jour. 1824, ap. und May stük.

invariable application in practice. More correctly LIND denominates it serous inflammation; but I must remark that the supposition of inflammation of any kind, in many cases of even sthenic delirium tremens, is not admissible, and were it generally acted upon would readily lead to errors of practice."—Page 73. ARMSTRONG considers the state of the brain alluded to as most commonly of a congestive character. The congestion of the meningeal vessels of the brain in delirium tremens we find noticed also in the dissections of FRANK, SPERANZA, BLACK, and others, whose names are not mentioned in the work before us.

3. In some cases of the sthenic form of the disease, occurring in young subjects, the morbid appearances first above noticed (paragraph 1) were not discovered after death, but the brain presented the indisputable indications of an *acute inflammation* having immediately preceded death; viz. redness of portions of the arachnoid membrane, caused by fine vessels the product of disease, unusual turgescence of the vessels of the pia mater and substance of the brain, and a morbid effusion of serum in every part within the cranium.—Page 74.

The morbid appearances described in the two preceding paragraphs (2, 3) are very frequently absent; they are found only after the sthenic form of the disease, and even then not always collectively.

"They are therefore," remarks our author, "with as little propriety to be considered the immediate cause of delirium tremens, as the same symptoms when they occur, for example, in mania and in typhus fever, or as the BROUSSAISAN gastro-enteritis in most fevers, can be presumed to point out the nature of these diseases. They are purely the product of the last attack, and can only serve as a proof of the fact, doubted by so many, that the brain is actually interested in the disease, and that the vascular system, especially of the latter organ, can frequently so far participate in it, that an irritating treatment, or one calculated to increase the determination of blood to the brain, can never be admissible; as such treatment will certainly tend still more to increase the action of the cerebral vessels, even sometimes carrying it to the extent of inflammation."—Page 77.

It is the opinion of Dr B. that in the disease under consideration, similar alterations to those found in the brain and its meninges, exist also in the spinal marrow, the ganglions, and the other parts of the nervous system, though he cannot absolutely say that he has detected them in the dead body, in consequence of his having heretofore had no opportunity of examining into the fact.

"Besides the alterations which have been described as occurring in the brain and its membranes, morbid appearances were discovered also in other important organs, particularly in the liver and spleen, both of which are, it is well known, often the seats of disease in drunkards; I have likewise found the mucous coat of the stomach and trachea reddened. The latter remark is also made by LIND. I have, however, to regret, that in all the cases in which the head was examined, permission could not be obtained to examine the other cavities."

Dr B. considers delirium tremens, as indicated by the well known symptoms, to be a peculiarly characterized disturbance of the intellectual and sensorial functions, and of the whole nervous system, arising from a morbid excitement or irritation of the brain and nerves, produced by a specific cause; viz. habitual intemperance in the use of ardent spirits.

"Concerning the precise nature of this disturbance we know as little as we do in relation to that of our sensorial or intellectual faculties generally, either in health or disease. The excitation of the brain in certain cases of delirium tremens, as well as of phrenzy, may give rise not merely to congestion, but to actual, or at least a serous inflammation of the brain; for to these cases is applicable the almost proverbial expression, 'ubi irritatio ibi affluxus.' This morbid condition of the blood vessels is, nevertheless, not always necessary in order to produce the disease in its fullest extent. In first attacks delirium tremens has more resemblance to phrenitis, subsequently it has a greater affinity to what are termed diseases of the mind, particularly mania, of which the acute form appears to constitute a species. According to my views of the disease, therefore, its most proper place in nosology will be between mania and phrenitis. In common with the former, it has the primary disturbance of the intellectual and sensorial functions, but differs from it in the circumstance of mania being very frequently unattended with any disturbance of the general system, which is seldom, perhaps never, the case with delirium tremens; in this last it resembles phrenitis, while it differs from it in the absence of the invariable and original inflammatory character of the latter. Chronic delirium tremens is scarcely to be distinguished from mania."—Page 79.

Dr B. knows of no more adequate comparison for the disease, than with a fit of intoxication; both having great analogy to each other, as well in their cause as in their symptoms, with the exception that both the action of the cause and its effects are more permanent in the former than in the latter; what in this, particularly where only of occasional occurrence, appears to be simply the effect of the excess immediately preceding, is in that the conjoined

effects of frequent fits of intoxication, and of the constant influence of these effects upon the nervous system, particularly the brain. "It is not surprising therefore," he adds, "that such effects should continue for a longer period in delirium tremens, than during a fit of intoxication, and that from the highest grade of habitual excess, a chronic or rather perpetual delirium tremens should result."—Pp. 79, et seq.

We proceed now to a consideration of the treatment of delirium tremens, founded upon the foregoing pathological views.

The author commences this section with some very pertinent observations upon the impropriety and even injurious consequences, of attempting to confine the patient to his bed, or of subjecting him to any personal restraint. He notices, what must have struck every one the least conversant with the disease, that the patients labouring under it are far more obedient to strangers than to their relatives and ordinary attendants, and are more readily controlled in an hospital than in their own dwellings.

The remedies for delirium tremens differ, according as it appears under the sthenic or asthenic form. When the former is the case, the indications of cure are, to calm the highly excited condition of the nervous system, to reduce the immoderate activity of the brain and nerves, and at the same time to appease the disturbance of the vascular system generally present; or at least to divert the congestion of blood from the brain; holding in mind, however, that the disease has a constant tendency to asthenia or collapse. To fulfil these indications will be demanded:

1. *Antiphlogistics.* The cure of the disease is not to be expected from them alone; they are adapted to those cases only in which the vascular system is implicated, and in their employment demand great judgment, as well in regard to their selection, as to the extent to which they are to be carried; otherwise they may quickly induce exhaustion, the occurrence of which, in this disease, is always to be dreaded. *General bleeding*, when the necessity for its employment is not perfectly clear, Dr B. conceives had better be omitted; as its possible advantages will be greatly overbalanced by the bad effects which may result from it: he having seen it, when the disease is fully formed, most generally, produce a speedy collapse. He therefore restricts its use to the primary stage of those cases which occur in young and robust subjects who have not before been affected with the disease; especially when these are attended with a

sense of ebullition in the blood; a full, strong pulse; vertigo; singing in the ears; great anxiety, &c. Even when delirium tremens is complicated by the presence of a local inflammation, especially of the brain or lungs, *topical depletion*, blisters, and appropriate remedies internally, are in most cases to be preferred to venesection. When decided symptoms of cerebral congestion exist, Dr B. has derived great advantage from leeches applied to the head. Even topical bleeding, however, from the danger of its producing a collapse, must be employed with much caution. *Purgatives*, particularly the saline articles of this class, are considered to be useful in those cases only, in which the disease remains for weeks in its forming stage, especially when accompanied with great tendency to constipation and foulness of the tongue; but under other circumstances, they seldom do good, and may be prejudicial from their debilitating effects.

2. *Acids*. Of these, Dr B. has only employed the sulphuric in the form of the elixir acidum Halleri: he considers this one of the best remedies in cases in which the disease is not yet fully formed, with great tendency to increased perspiration, considerable vertigo, singing in the ears, &c. In some instances the use of the acid is to be preceded by a purgative or even by venesection.

3. *Nauseating remedies*. "Of these," says Dr B., "I have as yet only employed the tartarized antimony, and with such decided advantage, that in the sthenic form of delirium tremens, I know of no remedy that can be compared to it. Its effects here may almost be denominated specific. Administered in such doses as to excite nausea, it unites in itself the three-fold character of a derivative, a sedative, and consequently, an indirect antiphlogistic; reducing the morbid activity of the nervous and arterial systems, and counteracting the determination to the brain; its use being, at the same time, unattended by any of the danger to be feared from opium or the lancet. I have administered the antimony in every stage of the disease, and know of no other counter indication to its use than the symptoms of the asthenic form."—Page 98.

When there exists foulness of the stomach, Dr B. administers the tartarized antimony first as an emetic, and subsequently, or when such is not the case, he directs five grains to be dissolved in five ounces of distilled water, of which the patient is to take a spoonful every hour or two; no bad effects being produced, after from twelve to twenty-four hours he increases the antimony one grain, or in very urgent cases to ten grains for the five ounce solution; if still no sickness be pro-

duced, or if the nauseating effects cease, in consequence of the patient becoming habituated to the remedy, the antimony is increased in each subsequent solution one grain, and in urgent cases to five grains, until the desired effects are produced: these often take place after five grains, but occasionally not until twenty or more have been taken. The symptoms of the disease now diminish, the patient feels inclined to sleep, lays himself willingly in bed, and soon falls into a natural slumber. If the sleep thus induced should not be of sufficient duration to effect an entire removal of the disease, the cure will be completed by the exhibition of a few grains of Dover's powders at bed-time. If the antimony acts too much upon the bowels Dr B. adds to each solution ten drops of laudanum. He in general continues the use of the antimony for about a day after the disappearance of the disease, in smaller doses and at longer intervals, to prevent the patient from being too suddenly withdrawn from the influence of the remedy. The only inconvenience which has resulted from the employment of tartarized antimony, in the hands of the author, has been, that when given in large doses or in too concentrated a solution, it has sometimes occasioned an inflammation of the mucous membrane of the tongue, fauces and trachea, and a crop of small pustules similar to those arising from its external application. These, however, we are assured, soon disappear of themselves without injurious consequences, and their occurrence may be prevented by a greater dilution of the remedy or by administering it in mucilage. But as tartar emetic when given in too large doses has been known to produce mischievous effects upon the mucous membrane of the stomach and bowels, Dr B. never allows more that ten to twelve grains to be given within the twenty-four hours, and very often five to eight grains have been sufficient. This remedy is conceived to be one peculiarly adapted to cases of delirium tremens complicated with rheumatism, or inflammation of the lungs, pleura, &c. Professor LUDERS is said to have employed the antimony in the disease before us with good effects*, and in the review of GÖDEN's writings, contained in the April number, 1827, of HUFELAND and OSANN's "Bibliothek der Praktischen Heilkunde," page 192, the writer informs us that he has never failed to remove

* In favour of the use of nauseating doses of tartarized antimony in delirium tremens, the names of D'OLEIRE, VON DEM BUSCH, MULLER, SCHMIDT, and LUCE are adduced.

the most severe attacks of delirium tremens by the following prescription, administered in such doses, every hour, as to induce nausea: R. Infusi ipecacuanhæ e. ℥ii. radic. parat. ℥vii. col. dissolve crem. tart. ℥i. oxym. scillit. ℥ii. In relation to the foregoing practice, which is scarcely known in this country, we have, ourselves, had but little experience—that little, however, is in its favour.

4. *Cold applications to the head.* These are of decided benefit, especially in cases with symptoms of cerebral congestion. With respect to diet, Dr B. directs the patient, in this form of the disease, to be confined to aqueous and mucilaginous drinks, weak water soup, and a little wheat bread.—Page 87 et seq.*

In the asthenic form of delirium tremens, the indications are, to diminish the excitement of the brain and whole nervous system by such means as shall not at the same time tend to increase the general debility, but which will in some measure replace the stimulus to which the patient has been habituated. According to our author no remedy fulfils this intention, in the greater number of cases, so effectually as opium; the employment of which he restricts entirely to this form of the disease. He had previously asserted, page 91, that "if opium be given in the sthenic form of delirium tremens, it will be found that by small and medium doses the excitement of the patient will be increased, and that very large doses must be administered before sleep can be induced,"—"and no physician ought to be surprised, should his patient by such treatment be sunk into sopor and everlasting sleep; even when such an event does not occur, the cure of the patient is not always obtained by the sleep thus forcibly obtained. I have occasionally observed, on the contrary, that even when the sleep has continued with little interruption for two days and as many nights, when the patient awoke, the disease has still remained, or else after a short intermission has again returned. It is a happy circumstance in regard to the ex-

* It is stated that in Friedrich's Hospital, Copenhagen, when delirium tremens was treated partially by antiphlogistics, with personal restraint of the patients, in 1820, 1 out of every 4 died, and in 1821, 1 out of 4 2-7ths; but in 1822, when a more strict antiphlogistic treatment was pursued under the direction of professor Herholdt, the patients being allowed their liberty, only 1 died out of 9 4-5ths, in 1823, 1 out of 12, and in 1824, 1 out of 9 2-3ds. In the same institution an exciting treatment, (by opium and stimulants we presume is meant) without distinction of the cases, gave as its result, in 1817, 1 death out of every 2 3-4ths patients—in 1818, 1 out of 2 4-9ths, and in 1819, 1 out of 2 10-11ths.

cessive use of opium in delirium tremens that the attack which at first assumes the sthenic form, may in its course become readily asthenic; and hence the treatment which was improper in its commencement, in consequence of this change in the character of the disease, may finally effect its cure. Did not this tendency to asthenia and collapse constitute a part of the character of the disease, a proportionally greater number of patients would undoubtedly sink under the opium practice."

But while Dr B. admits that opium is almost the only remedy adapted to the cure of delirium tremens, in its asthenic form, yet even here he is extremely reserved in its administration; and he reprobates in no very mild terms the extent to which others have believed themselves authorized from experience to carry it. With the late Dr Albers he commences with it in half grain doses repeated every two hours; if these have not the desired effect, the opium is increased to one grain at the same intervals; and if sleep be still not procured, and the case is one of great emergency, two grains are then administered every two hours; but he seldom allows the remedy in this extent to be repeated oftener than four times; when, if the disease still continues, the quantity of the opium is reduced to a grain, or even half a grain, and in this dose continued until the termination of the attack, provided nothing occurs to contraindicate its employment. In most cases he has found that half a grain every two hours soon procures a critical sleep; but when this dose is found ineffectual, a larger dose administered at bed time will more generally succeed. The remedy is directed to be continued in diminished quantity for a day or two subsequent to the removal of the disease, in order to guard against a relapse.

What may have been the actual success of the foregoing treatment in the hands of our author, it is impossible to say; no data being furnished from which any thing like a correct judgment can be formed. In very many of the cases of delirium tremens which have occurred under our own observation, we feel no hesitation in saying, that had we restricted ourselves to the doses of opium which Dr B. has recommended, no benefit whatever would have been produced. Experience has taught us, and the observations of others have confirmed the fact, that not unfrequently the safety of the patient demands the employment of large doses of the remedy in order that sleep may be promptly induced. In these cases, delay, or what amounts to the same, trifling doses of the opium is in

the highest degree dangerous; the patient being often permitted to die from mere exhaustion, when by an appropriate treatment a cure might have been readily effected. Dr B. appears to us to have run equally as much to one extreme, when from a fear of its injurious effects, he restricts the employment of opium in delirium tremens within such narrow limits, as they have to the opposite, who insist upon its liberal administration in every case, stage, and circumstance of the disease, and maintain that in this disease no evil can result from its use in almost any quantity. It must be admitted that the opium practice in delirium tremens, particularly to the extent to which it is sometimes necessary to carry it, requires much judgment and not a little caution in its management. Nothing should be left to chance, nothing to the discretion of the attendants; but from the moment it is commenced with, until sleep ensues, the eye of the physician should be removed from off his patient for as short a time as possible. By proper precaution, however, every possibility of danger is removed, and in few cases will the practice fail in effecting a cure.

Whether the different tinctures of opium produce other effects than the article in substance, Dr B. is unable to say; the former he thinks may perhaps be preferable when the patient rejects the latter by vomiting. This rejection, however, Dr SCHMIDT, Sen. is said always to have prevented by combining the opium with an acid. We would recommend that in this, as well as in every other disease in which it is necessary to administer opium in repeated doses, it be given in powder, or rubbed up with mucilage of gum arabic.

The other remedies which have been proposed for the cure of asthenic delirium tremens, as camphor, volatile alkali, musk, digitalis, &c. are next considered, but as they are confessed to be in every respect inferior to opium, under the ordinary circumstances of the disease, it is unnecessary to notice the observations of the author in regard to them.

To the use of ardent spirits as a remedy in delirium tremens Dr B. very properly objects. "Even as a prophylactic their use is justifiable," he remarks, "only in worn out subjects, and in very moderate doses." From external derivatives, as blisters, sinapisms, &c. he would anticipate good effects in cases attended with cerebral congestion; and in those complicated with local inflammations, particularly of the liver or lungs, he directs their application in the neighbourhood of the affected organ: blisters have also ap-

peared to him to be of great service in removing the affection of the head, ringing of the ears, &c. which frequently continues after the removal of the delirium.

For diet he directs water gruel, thin sago, oat meal gruel, &c. with a moderate quantity of animal broth, and wheat bread.—Page 107 et seq.

Under the head of "treatment of symptomatic delirium tremens," we meet with nothing new or very interesting; and the same may be said in relation to the observations upon the treatment of the chronic form of the disease. We close our analysis with the remarks of Dr B. upon the emetic practice as recommended by Dr J. KLAPP of this city.

"The good effects of emetics in many cases of delirium tremens, in which a foulness of the primæ viæ calls for their employment, is incontestable. As a remedy for the disease, ALBERS, before he had made trial of them, anticipated great advantage from their exhibition, and determined to resort to them the first opportunity that presented itself; this occurred a short time before his death, in a case which he attended in conjunction with myself: but the fatal termination in this instance gave to him such a distrust of emetics that he determined never again to make trial of them in this disease. GÖDEN recommends their employment only in the commencement of the attack, not to evacuate sordes, but as a nervine, in which manner he presumes they act from the agitation they produce in the cardiac plexus. In the review of the works of this author in the 'Literary Gazette of Leipzig,' the effects of emetics are also praised in the beginning of those cases suddenly induced by some mental emotion; both the latter opinions appear to be correct. But when some practitioners recommend the use of emetics in cases preceded by an epileptic fit, I, on the other hand, can only say that I have often prescribed them under such circumstances, and but in one instance, with the least advantage; others again insist upon their use in every case of the disease; but even these will be obliged to admit that, although frequently repeated, they often produce no effect, or at least that they will not alone effect a cure, and that in the asthenic form of the disease their repeated employment will tend to accelerate a collapse." "The good effects resulting from emetics in delirium tremens will be found solely confined to those cases which owe their origin to disorder of the stomach, or at least, in which gastric symptoms predominate, as is frequently the case when the disease is brought on by some mental excitement."—Pp. 116, 117.

The volume closes with the detail of twenty-five cases of the disease, variously treated, eleven of which terminated fatally.

Our opinion of Dr B.'s "observations" will be readily collected from what has been already said: although we differ from him widely on many important points, we nevertheless recommend the work as one deserving of an attentive perusal, and as better calculated to lead to a rational treatment of delirium tremens than any with which we have as yet met. We hope before long to see it in an English dress. φ. ε.

ARTICLE XII.—*Medico-Chirurgical Transactions. Vol. XIV. Part II.*

We continue our notice of the 14th volume of the Transactions of the Medico-Chirurgical Society—having in our last analyzed the first part of this valuable production. The second part commences with a long but excellent paper, containing,

Pathological and surgical observations relating to injuries of the brain; by B. C. BRODIE, F.R.S. Surgeon to St George's Hospital.

As the object of the distinguished author is to present a distinct and connected view of all the parts of this curious and interesting inquiry for the benefit of the surgical student, we shall follow his course very closely, although we may notice subjects familiar to most of our readers. To all, however, it will be useful to know the opinions of an English surgeon of reputation on matters of great importance.

The present communication embraces only *the immediate consequences* of injuries of the head; the secondary consequences, or those resulting from inflammation, are reserved for another period. Of the immediate consequences of contusions and wounds, a distinction is to be drawn between the actual derangement or destruction of the natural organization as evinced by dissection, and the symptoms arising from the disturbance of the functions of the injured organs, at the same time keeping in view the mutual connection of these two orders of facts, that a correct pathology may be instituted for practical purposes.

Dissection manifests various appearances. They may be classed under distinct heads—as,

1. Extravasation of blood under one or more of the tissues forming the scalp. When under the pericranium, the feeling is similar to that of depressed bone.

2. The scalp is sometimes lacerated so as to expose the pericranium, or this last membrane is torn so as to expose the bone. These accidents are more serious than the former.

3. The dura mater is sometimes separated from the bone, with a consequent rupture of the small connecting vessels and extravasation of blood.

4. Fractures of every variety are found. Those at the base of the cranium are more dangerous because almost invariably complicated with extensive injury of other and more important parts. Fractures per contre-coup may occur but are not so common as supposed by the French. Mr Earle has noticed a fracture of this kind only where the occiput has been forcibly impelled against the atlas. In this Mr Brodie's experience coincides with Mr Earle's. In all cases where depression exists, the inner table is always broken to a greater extent than the external, and hence the actual depression is greater than the external fracture would indicate. In many cases also there is a distinct depression of the inner table and even splinters driven into the substance of the brain, where a simple fissure and no depression existed in the outer table. These phenomena seem dependent on the greater brittleness of the inner table and the greater elasticity of the outer table.

5. In young children there may be an indentation without fracture—and this in a few days may disappear without the assistance of the surgeon—owing probably to the pulsations of the brain.

6. The sutures may be found separated. This is owing to great violence, and therefore more rare than fractures, and more dangerous.

7. Extravasations of blood may occur within the cranium in various situations. 1st. Between bone and dura mater from rupture of capillary vessels—or of middle meningeal artery. The last is the only source of dangerous compression;—this vessel may occasionally be ruptured without fracture. 2d. Blood may be effused under dura mater; then generally in the arachnoid cavity—rarely in the ventricles; occasionally in the substance of the brain or in the cellular tissue of the pia mater. This occurs more frequently at

the base of the cranium, and generally from rupture of the substance of the brain by contre-coup. Wounds of the sinuses bleed profusely, but the hemorrhage is easily arrested, so that dangerous compression is hence very rare. Blood is sometimes discharged from the ear;—in a few cases, Mr BRODIE has known this to arise from a laceration of the lateral sinus near the external meatus and on the inner surface of the mastoid portion. In another case, where there was hemorrhage from both the ear and the nostrils, examination after death exhibited a rupture of the cavernous sinus with fracture of the base of the cranium.

8. The brain is liable to all kinds of wounds, which are often complicated with the effects of contusion.

Such are some of the injuries of the brain and its appendages as revealed by dissection; but bad consequences may immediately result from contusions, and the patient even be destroyed, without "the most accurate anatomist" being able to discover any lesion in the brain or its membranes. This partial or total suspension of the cerebral functions is termed *concussion of the brain*;—the symptoms need not here be detailed. Although Mr BRODIE affirms that "the brain appears to retain its natural structure unimpaired," yet he says, "it is difficult to conceive in what other manner concussion of the brain can operate" than by a derangement of organization; and hence he *supposes* that the minute ultimate structure of the brain may be altered without our senses being able to recognise it; and of course, that where individuals recover from a momentary or transitory concussion, there has been as speedy a reparation of such structural derangement. Such a supposition *may be* true: but we must deem all hypotheses of this kind not only unphilosophical, but useless. We are in reality no wiser on the supposition of our author, than if we believed that function may cease while organization is perfect. When the heart ceases to beat, a muscle to contract, or the skin to perspire, we have in most cases not the least foundation for the supposition that organization is disturbed: and when a man is stunned by a blow on the head and instantaneously recovers his cerebral functions, why should we infer that the medullary or cortical mass has been structurally disturbed and in a moment has had its integrity restored? Hence, although an alteration of structure necessarily causes a disturbance of functions, yet, as far as we know, function may be disturbed or even permanently destroyed without

alteration of structure. This doctrine we conceive to be of importance.

The disturbance of the heart during concussion Mr Brodie would refer, not to any necessary dependence of the actions of the heart on the influence of the brain, which he would deny, but to the connection and sympathy existing between different organs. He nevertheless would refer the immediate cause of death from concussion to the disturbance of the heart's action. We would, however, ask if the brain is not a *vital* organ as well as the heart, and why a suspension of its functions may not be therefore as certainly and as speedily fatal as a suspension of the heart's actions? This disposition to exalt the circulatory system to an undue importance in the animal economy, is still manifested by the disciples of the English school, and is continually exhibited, we think, by the present medical revolutionists of France, notwithstanding all that is said and written on irritation.

Compression of the brain arises either from a diminution of the cavity of the cranium, as in depression of bone, or from an actual increase of the contents of the cranium, as from effusion of blood, &c. In such cases the functions of the brain become impaired. "This is a matter of experience and observation, about which there is no dispute." Mr Bell, however, has affirmed that the substance of the brain is incapable of compression, and that the symptoms are owing to the diminution of the size of the blood vessels preventing the supply of arterial blood which is necessary for its functions. But it is true, that symptoms of compression will arise from a preternatural determination of blood to the head, the vessels being over loaded; and that such cases are relieved by bleeding, as if distended vessels would cause effects similar to those from extravasation of blood. Again, although Mr Brodie admits that the substance of the brain is incompressible, yet the effects of pressure must be to alter the position and relative situation of the delicate fibres of which its minute structure is composed.

As to the symptoms of compression, surgeons well know the difficulty of distinguishing them from those of concussion. Mr B. notices them under several heads.

1. *Pain in the head.* This is also experienced in concussion: that it may arise solely from pressure is proved by the fact, that it has ceased immediately on elevating a portion of depressed bone.

2. *Insensibility* is often incomplete, as in concussion. Sometimes it is perfect. When from depression of bone, it occurs immediately; when from extravasation, more gradually, and often some time elapses before the patient becomes insensible. Occasionally there is insensibility from concussion, then the patient recovers and again becomes insensible from compression. Mr Brodie does not believe that the cause of the insensibility, whether from concussion or compression, can be distinguished by the symptoms. He presents a case of compression from effused blood, as proved by dissection, in which the symptoms were similar to those of concussion, as detailed by Mr Abernethy. There is often merely partial loss of sensibility, owing to pressure made on particular nerves.

3. *Paralysis* occurs in the muscles of voluntary motion; in the bladder; in the sphincter ani; in the muscles of respiration also; whence stertor and contraction of the diaphragm at longer and longer intervals until respiration ceases. "It is this paralysis of the muscles of respiration which, in ordinary cases of pressure on the brain, is the immediate cause of death." There is often hemiplegia, and this is sometimes permanent; but it is a more rare occurrence after accidents than in cases of apoplexy, as in these last, the effusion is more frequently in the ventricles, or substance of the brain. Particular muscles may be paralyzed. Mr B. has never met with an exception to the observation, that hemiplegia occurs on the side opposite to that on which the effusion has occurred.

4. *Convulsive motions* often appear on the side opposite to that paralysed. Mr B. doubts whether they are attributable to pressure on the brain; but would refer them to wounds, or laceration of this organ. They are to be distinguished from general convulsions.

5. *Affections of the pupils.* The state of the pupils varies exceedingly, without our being able to explain the reason, the circumstances being often apparently similar. They are usually dilated; often contracted. Sometimes one pupil is dilated, and the other contracted. When dilated they sometimes contract immediately after the abstraction of blood, and then enlarge as the effects of the bleeding cease. Mr B. has known the pupils sensible to light while the patient remained in a state of complete insensibility; and also there may be insensibility of one of the pupils without general insensibility, and even without loss of vision.

6. *Affection of the circulation* is sometimes, but not always observed. The contractions of the heart are generally less frequent or less forcible than natural. In some cases the strength and activity of the pulse will be instantaneously restored on the removal of the pressure, as when a depressed bone is elevated. An intermittent pulse, according to Mr ABERNETHY, is a less frequent occurrence in cases of compression than in those of concussion of the brain.

7. *Sickness and vomiting.* Mr BRODIE doubts whether these should be ever referred to pressure on the brain. They are more probably dependent on concussion; as when compression is greatest there is no disposition to vomit, and sickness and vomiting have occurred immediately after pressure has been removed.

The symptoms of compressed brain vary exceedingly, not only according to their intensity, but as they happen to be variously combined. The prognosis is very uncertain; under apparently similar circumstances, some individuals soon recover, others speedily die, while others who survive are paralytic or otherwise injured for years. Mr BRODIE has met with one case in which he was led to believe that the patient perished from secondary hemorrhage within the cavity of the cranium.

Wounds of the brain and its membranes. Wounds of the membranes greatly aggravate the ultimate danger of the case, but do not add to the immediate symptoms, and these alone are now considered.

Wounds of the substance of the brain are usually complicated with the effects of concussion or compression of the cerebral mass; so that it is impossible to predict the consequences of a wound of a given extent in any given situation. In many cases also of punctured, incised, and lacerated wounds, the functions of the brain are not at all impaired, and often, even large portions of this organ are lost while the mental and corporeal functions remain apparently uninjured. Mr BRODIE is, however, inclined to the opinion, that convulsive motions and other indications of injured brain, may occur from punctured or lacerated wounds when no concussion or compression has been suffered.

Other immediate consequences of injured brain.

1. *Partial nervous affections.* Concussions of the brain are sometimes followed by partial or complete loss of the sense of

hearing or of smell, of sight or of taste; the nerves of other organs retaining their usual susceptibilities.

Dr HENNEN gives a case of an individual deprived of his sexual powers by a blow on the occiput; and mentions that the powers of speech are often lost, while those of memory remain; and in numerous cases, "patients have told me that they could hear distinctly what I said, and distinguish my voice from that of others, and have repeated my words as a proof both of this fact and of their retention of memory, while they could not distinguish my person or give utterance to their thoughts*."

II. *Convulsions.* These are of an epileptic character, but are not uniformly followed by a state of profound sleep or stupor. They are more formidable in appearance than in reality, as patients often recover without any unfavourable symptoms. They generally occur soon after the accident, but sometimes not for several days, and may then be dependent on inflammatory irritation. That these convulsions are generally the result of a moderate degree of pressure appears from several circumstances to be probable; as

1. In experiments on animals Mr B. has found, that wounds of the base of the brain, causing extravasation of blood, usually produce convulsions before stupor, paralysis, and death.

2. Concussion ensues instantaneously, but convulsions never occur until after a certain lapse of time, allowing an opportunity for effusion.

3. Convulsions continuing for some time have been cured by trephining and by removing coagula of blood. Convulsions will also occur after the symptoms of stupor and insensibility have been relieved by means of depletion, &c. showing that they are manifested only under certain degrees of compression of the brain.

III. *Furious delirium.* This is often raving and unmanageable, and might be supposed dependent on concussion; but there is reason to believe that it occurs under nearly parallel circumstances as convulsions. For although there may not be any very evident symptoms of compression, yet from the effects of bleeding, and from the fact that it is often immediately relieved by removing compression when its existence is positively known, there is reason to con-

* HENNEN's Military Surgery, page 305.

clude, that this delirium is the result of that degree of pressure which operates merely as a source of irritation. Mr BRODIE details valuable cases illustrative of the above observations.

Treatment of concussion of the brain.—Of the two opposite modes of treatment adopted in simple concussion of the brain, Mr BRODIE recommends very decidedly the depleting plan, confining the exhibition of cordials and stimulants to those cases in which the patient is manifestly sinking. The depressed condition of the circulation is desirable, as it lessens the danger of effusion: and when, as usual, after depression, a state of excitement ensues, bleeding becomes necessary to arrest or check effusion of blood and to prevent inflammation. This remedy is to be assisted by other portions of the antiphlogistic plan, rest, elevated position of head, cold applications, laxatives, &c.

Mr BRODIE cautions against a too free evacuation of blood, as a train of symptoms sometimes occur from such loss, which may be attributed by the ignorant to the effects of the injury*. Under such circumstances, patients will recover on being allowed solid nourishment, with occasional doses of the carbonate of ammonia.

Treatment of compression of the brain, not complicated with wounds of the brain or its membranes.

When symptoms endanger life, the cause, if possible, should be removed. When there is fracture with depression and a wound of the scalp, the surgeon may at once operate and raise the bone; and when the scalp remains entire, it must be divided, that the bone be completely exposed. So, also, the trephine is necessary when the symptoms of hemorrhage depend on effusion between the dura mater and bone. This seldom occurs unless the middle meningeal artery is injured, hence, as a general rule, we should operate over the tract of this vessel. Mr ABERNETHY's test will here be sometimes useful. Mr BRODIE advises, that when the trephine is applied for extravasation of blood, exterior to the dura mater, a large portion of bone should be removed, as suppuration will result from the whole surface of the detached portion of the dura mater, and the pus would collect under the bone, giving rise to symptoms of pressure on the brain and extending the inflam-

---

* Vide MARSHAL HALL's paper, vol. 13 of the Transactions, and Review of it, in vol. i. of the North American Medical and Surgical Journal.

mation to other parts. It would appear to us, however, that such confinement of matter could be prevented by a more simple and less objectionable method than removing large portions of the cranium.

When extravasation takes place under the dura mater, Mr Brodie recommends what may now be regarded as the common plan of treatment, viz. to depend on a decided antiphlogistic course in all moderate cases of compression; but in severe and desperate cases the surgeon should afford his patient the chance of recovery by puncturing the dura mater. The dangers of this simple operation are great, for reasons we had occasion to mention in a former review*; but sometimes the patient is immediately relieved, and ultimately survives. Two interesting cases of this character are detailed.

The above observations relate chiefly to examples where the symptoms of compressed brain are urgent: but it often happens in the experience of surgeons, that fractures of the cranium exist with depression, and yet few or no symptoms of compressed brain are manifested. As the condition of the patient in such cases does not indicate an immediate operation, the question arises, whether the depressed bone should or should not be elevated?

This important question can only be positively decided by reference to the history of numerous accidents of the kind here mentioned. Mr Brodie, after enumerating the dangers from exposing the dura mater in elevating the bone, and also the disadvantages and dangers which may result if the depression be allowed to remain, and after examining the various notes of cases which have fallen under his own notice, confirms the practical rule laid down by Sir Astley Cooper, viz: That in cases of simple fracture with depression, no operation is required: but that in cases of compound fracture, of fracture with wound of the scalp and with depression, the bone should be elevated; as in this case suppuration is inevitable, but in the former, it may frequently be avoided by a proper antiphlogistic course. It is true, however, that patients often do well when no operation is resorted to in compound fractures of the cranium, and that mischievous consequences frequently result when

---

* Vide North American Medical and Surgical Journal, Vol. I. p. 182.

simple fractures with depression have been trusted to antiphlogistic remedies alone. The general rule will nevertheless hold good.

Treatment of contusions and wounds of the scalp. In this Mr Brodie is not peculiar. He has met with two cases of extensive ecchymosis of the scalp; the swelling continuing to increase for days after the accident. In one, he arrested the swelling by a compress and bandage over a branch of the temporal artery which was supposed to be wounded. Both patients did well.

Treatment of fractures of the cranium without depression. The modern practice consists in a strict antiphlogistic plan, as being much more advantageous than trephining the cranium as recommended by Mr Pott. Mr Brodie makes some judicious criticisms on the reasons advanced by this distinguished authority for his frequent resort to this operation.

Treatment of wounds of the brain and its membranes. These demand no peculiar management, otherwise than a more steady and continued adoption of the remedies for preventing inordinate inflammation of the brain or its membranes, by which, effusions of serum and pus, gangrene and hernia cerebri, would be caused. Great care should be exercised not to increase the mischief by rude or injudicious attempts to remove splinters, to elevate depressed portions of bone or to remove foreign substances lodged in the substance of the brain. So many patients have recovered, notwithstanding such complicated wounds, that the general rule may be advanced, that active interference with such injuries of the brain, where there are no symptoms of compression, is not advisable. A judicious but decided course of depletory measures to prevent inflammation promises to be more advantageous.

Treatment of other consequences of injured brain. When any particular class of sensations is injured or impaired, as when deafness or a loss of smell or taste occurs, no practice has been found very useful. Patients often recover after a year or two;—but sometimes the affection remains.

When there is raving delirium, free bleeding has always afforded relief; and this is the proper remedy for convulsions, which are probably dependent upon the same state of the brain, especially when immediately succeeding the accident. If they occur at the expiration of some days from the time of the injury, they may depend on inflammation and demand the further use of the lancet. "But they may also exist independently of inflammation, being

aggravated by any additional abstraction of blood, and subsiding on the patient being allowed to take some more substantial nourishment than that which had been allowed him previously."

Analysis of a specimen of cutaneous perspiration; by J. Bostock, M.D. F.R.S.—It is perhaps well known that various circumstances have an influence over the nature of the cutaneous secretion. The character of this fluid, which often seems to be, as regards its quantity, in an inverse ratio with the urinary secretion, is therefore influenced in all probability by the nature of the urine, although differing from it in many respects; and there can perhaps be less doubt that both discharges vary exceedingly according to the state of the digestive apparatus. Professor Cooper of North Carolina states that he can render the perspiration and urine acid or alkaline at pleasure by the exhibition of acids or alkalies. Hence in disease we must expect an ever varying condition of these fluids in colour, quantity, and essential constituents. Mr Bostock had a good opportunity of analyzing a quantity (℥iv.) of perspirable fluid, presented to him by Dr Bright, from a patient suffering from irritation of the digestive and urinary organs, and who discharged large quantities of urine daily, and occasionally perspired so freely that the fluid passed through the bed and was collected in vessels. The composition was as follows:

Water	981.7
Animal matter	4.6
Muriate of soda	12.56
Soda	1.14
	1000.00
Phosphates and sulphates	a trace

The animal matter on examination contained a very small quantity, scarcely appreciable, of albumen, and also a brown, viscid substance, having some resemblance to urea and which may be characterized as intermediate between this principle and osmazome, or perhaps a combination of the two. Comparing this analysis with that of the serum of the blood as given by Marcet and Berzelius, the fluid of perspiration in this case differed from serum, in the smaller proportion of the solid contents, and especially in the almost total absence of albumen, while it agrees with it in containing a

considerable quantity of muriate of soda, a portion of uncombined soda, and a quantity of animal matter similar to that contained in serosity. It therefore belongs essentially to the class of serous fluids, notwithstanding the absence of albumen.

Of catarrhus æstivus or summer catarrh; by J. Bostock, M.D. F.R.S.—This is a variety of a catarrhal affection from which Dr Bostock has suffered much in his own person, and of which he has met with about eighteen cases. In all, the disease attacks annually in the summer season, is seated in the membrane lining the eyes, nose, fauces and vesicles of the lungs, and the symptoms are aggravated by exposure to heat, fatigue, or inordinate stimulation. The annual attack commences usually about the end of May or beginning of June, and continues from four to eight weeks. There is generally fulness of the head, stoppage of the nose, sneezing, watering of the eyes and discharge from the nostrils. In about half the cases respiration is affected, and in some cases it is the only symptom. In some there is a distinct cough, in others irritation of the throat, fauces or eyes. Occasionally there is no evidence of irritation of the eyes, not even a discharge of tears. The general indisposition is very various; often there is no inconvenience from the local affection, while in other cases, particularly where the lungs are involved, the patients are unable to continue their usual avocations.

Dr Bostock notices a prevalent opinion in England, that the exciting cause is owing to the effluvium from new hay. Hence the disease has been denominated *hay-fever;* but he discovers no ground for the supposition in his own case, but does not seem disposed to deny that others may have been influenced by this cause. He nevertheless believes that the disease is of a specific nature. This view is in some measure confirmed by its annual occurrence, and especially by the fact, that it is but little influenced by medical treatment. "With respect to the cure or mitigation of the complaint, I regret to say, that except in so far as we are able to avoid those circumstances which bring on the paroxysm, I have been able to obtain very little satisfactory evidence."—"The experience of many years has taught me not to expect a cure for the complaint, so that I now only aim at relieving any peculiarly urgent or distressing symptom. Bathing the eyes in tepid water and fomenting the face generally, occasionally applying small blisters to the chest,

mild purgatives, small doses of ipecacuanha, Dover's powder, squills and digitalis, bathing the feet in warm water, a moderate but not spare diet, perfect rest, and carefully avoiding all extremes of heat, comprise the whole of the means I have found useful to myself."—"Among those things which I have tried without success are bark, iron, opium, mercury, large blisters, topical bleeding, the waters of Harrowgate and Leamington, the baths of Bath and Buxton, sea-bathing, the shower bath, abstinence from wine and animal food, and a more free use of them; each of these having been made, as it may be said, the subject of distinct experiments, and persevered in, until some circumstances rendered it necessary to discontinue them, or until they produced a decidedly injurious effect."

We are acquainted with a gentleman of this city, now near seventy years of age, who for upwards of forty years has suffered an annual attack more or less severe of this summer catarrh. He generally suffers in August and September, and has for a long time abandoned, after many trials, the expectation of being cured.

Case of rupture of the stomach produced by vomiting; by J. N. WEEKS, Esq.—This was the case of a man, George Andover, aged thirty-four years, and who had been liable for two years to paroxysms of pain in the stomach, but during the intervals was in tolerable good health. About Christmas, 1827, he vomited blood, by which he was much reduced, and his paroxysms were rendered more frequent. On the 13th of April, he was admitted into St Bartholomew's Hospital, suffering from great pain in the epigastric region, extending over the abdomen. On the following day the pain had subsided, there had been nausea but no vomiting. At 11 o'clock, P.M. he had a sudden attack of severe pain at the pit of the stomach—pulse depressed—great restlessness, and countenance expressive of great suffering. Pain continued for two or three hours, when he was suddenly seized with violent vomiting. The pain somewhat abated, there was no return of vomiting; he however sunk rapidly, and died at four o'clock in the morning.

Examination. Stomach flaccid and empty; its contents were effused into the cavity of the peritoneum through a rupture four inches in length, extending from below the lesser curvature of the stomach to near its cardiac extremity; the rupture in the peritoneal coat extending an inch farther than that in the muscular or mucous coat. On the posterior surface of the stomach, there was a lacera-

tion three inches in length; and two or three small ones from an inch to an inch and a half in length at the greater curvature, but they extended only through the peritoneal coat of the stomach, the muscular and mucous coats remaining perfectly whole. The mucous membrane was of a deep red colour throughout; its texture was softened and partially emphysematous, but the stomach in other respects appeared healthy.

A peculiarity of this case compared with those on record, is the extensive rupture of the stomach with so little disease of its coats; there was no thickening nor ulceration; there appeared to to be merely a recent inflammation and softening of the mucous coat. Another peculiarity was the laceration of the peritoneal coat without including the other tunics. Mr C. M. CLARKE has recorded a similar example as regards the uterus, on the posterior surface of which organ he found a number of lacerations of the peritoneal covering, while the substance of the uterus was perfect.

ARTICLE XIII.—*Anatomie Comparée du Cerveau dans les Quatre Classes des Animaux Vertébrés, appliquée à la Physiologie et à la Pathologie du Système Nerveux. Par* E. R. A. SERRES, *Medecin Ordinaire de l'Hopital de la Pitié, Professeur Agrégé de la Faculté de Medicine de Paris, &c. &c. Paris, Tome II.* 1826.

The first volume of M. SERRES's work was published in 1824, and very fully reviewed in the first number of this Journal for January 1826. The volume now before us abounds more in physiological applications and illustrations drawn from pathology, than its predecessor. In both we find a continued enforcement of the author's favourite position, viz. the eccentric formation and growth of the nervous system, that is, from the circumference to the centre; and not, as long taught, from the centre to the circumference. That this was an opinion indirectly advocated by BICHAT, ABERNETHY, MAGENDIE, and SPURZHEIM, we endeavoured, in the article alluded to above, to show by extracts from their respective works

or lectures; at the same time that we had occasion to quote the adverse authority of TIEDEMANN. Another position maintained by M. SERRES was the prior formation of the arterial system, on the arrangement and distribution of which depended those of the nervous system. Among other facts in opposition to this view of the supremacy of the blood vessels, is that cited by Dr SPURZHEIM in his "Anatomy of the Brain". It was a case of a hydrocephalic child dissected by Dr BARON, and by him exhibited to the Academy of Medicine in Paris: he showed that, although the carotid arteries existed, the anterior cerebral lobes were wanting; a consequence not deducible from the premises as laid down by M. SERRES.

That the author may have all the weight with our readers to which his experimental observations entitle him, we shall, before taking up the consideration of the second volume, adduce some of those contained in the second part of the first, and which especially bear on the question of the eccentric growth of the nervous system. In his investigations into the origin and progressive development of the nerves called cerebral, he found that, in all of them, the part first formed in the fœtal state of the animal was at the sensitive surface of the organ to which they subsequently gave function; and that in proportion as the new being approached the epoch for its expulsion from the uterus, the nervous expansions and minuter twigs were joined in a cord which gradually approached the brain, and was finally inserted in or joined to that portion from which it is usually said to take its rise. In demonstrating this fact in the olfactory nerve, M. SERRES makes use of a new term, *olfactory field;* by which he means the space at the basis of the anterior lobes of the cerebrum, bounded outwardly by the external, inwardly by the internal fasciculus of the olfactory nerve; backwards by the junction of the optic nerves, and the anterior part of the lobe of the hippocampus; and forwards by the union of the two above mentioned fasciculi. This olfactory field, very small in man and the monkey, augments in size in the plantigrade, carnivorous animals, the bear, the pachydermata, the horse, and the ruminating animals. This enlargement, caused by the greater turn which the two fasciculi, especially the external, take before their insertion into the brain, corresponds, in the opinion of the author, with the development of the nasal fossæ, and the forward projection of the face. To the band formed by the union of the two olfactory fasciculi, he gives the name of *pedicle of the olfac-*

tory nerve, in preference to that of trunk or processus. By the term *olfactory lobule*, he means to designate an enlargement or swelling of the roots of the nerve at a distance from the cerebral hemispheres, varying in the different classes of animals.

The olfactory apparatus viewed at the base of the encephalon is composed, in the higher families of the mammifera, of four distinct parts, exclusive of the olfactory lobule, viz. 1. The olfactory pedicle: 2. Its roots, internal and external: 3. The olfactory field: 4. The lobe of the hippocampus.

The precise point of the insertion, or, as anatomists would generally say, of the origin of the olfactory nerve is not well determined. The most probable opinion is, M. SERRES thinks, that first advanced by MALACARNE, and adopted by ROLANDO and BLAINVILLE, of the connexions of this nerve with the external radiation of the anterior commissure. In man, we see the external root inserted by one of its bands into the external rays of this commissure. In some of the ruminantia, such as the goat and camel, the connexion is still more readily seen. In birds and reptiles it is less evident. In birds, M. SERRES observed, that the posterior part of the external root was in part joined to the root of the radiating lamina of the hemispheres, and afterwards communicated with the pyramidal bands in passing above the prolongation of the optic lobes. They are deficient in the internal roots, and to a corresponding degree in the extent of the olfactory sense.

Pathology shows that if the olfactory field be materially affected by disease, the smell of that side is lost to an extent corresponding with the disorganization. An alteration of the roots of the nerves is attended by diminution of function, especially if the external root be the part affected. It has been found in experimental physiology that a removal of the anterior part of the cerebral hemispheres as far as the anterior commissure completely destroys the sense of smell in the animals on which the ablation was practised.

In the chapter on the nerves of vision, the author points out, as of unequivocal demonstration, their decussation in the inferior classes of the vertebral animals; the nerve of the right side passing perceptibly to the left, and that of the left side to the right. This arrangement is less manifest in birds, and can only be discovered by a very careful dissection of the nerve; and in the mammifera it is still more obscure. CUVIER exhibited it however very clearly in a preparation of the optic nerve of a horse. M. SERRES was suc-

cessful in a similar demonstration in the embryos of the human subject, as also of the horse, sheep, ox, hare, and guinea pig. He saw clearly the internal fibres form an angle with the external at the point of union of the two nerves; and he followed the fibres of the right into those of the left nerve, and those of the left into the fibres of the right. The decussation of the optic nerves exists therefore, though in different degrees, in all classes of animals. For the entire confirmation of this fact, we are, however, more indebted to pathology than to experimental physiology and anatomy.

Sœmmering dissected six subjects, who had each of them lost an eye, and he constantly found the optic bed of the opposite side wasted. The brothers Wentzell have, in their own practice, met with cases confirmatory of this fact. Let us however remember, that the optic bed is often atrophied without any impediment to vision or diminution of the optic nerve—a fact readily explicable by our knowledge of the connection of this nerve, not with the optic thalami but with the corpora quadrigemina. The most authentic cases in pathology prove the decussation, as we find in the observations of Valsalva, Morgagni, Haller, Pourfour Petit, Saucerotte, Sabouraut.

If we injure deeply one of the hemispheres of the brain in a mammiferous animal, as has been done by Pourfour Petit, Saucerotte and Rolando, the sight is weakened or destroyed on the opposite side.

If one of the anterior tubercula quadrigemina be wounded the same effect takes place; the opposite eye to the part wounded is the one alone which is struck with palsy.

If we wound the two hemispheres or the two tubercula successively, the sight is disturbed and lost in corresponding succession, by a constant disorder in the eye opposite to the injured hemisphere or tubercle.

A removal of one of the hemispheres in a bird, as practised by Rolando, causes constantly feeble vision in the eye opposite to the hemisphere removed. If the two hemispheres be removed successively, we observe a paralysis of vision in a decussated direction. A destruction of one of the optic lobes is followed by loss of sight in the eye of the opposite side. The effect is always in a decussated direction when these lobes are removed from frogs.

Hence, says the author, the most authentically recorded patholo-

gical facts, and without exception all the physiological experiments go to prove the decussation of the optic nerves.

In reptiles, turtles excepted, and in fishes, the hemispheres of the brain have no action on the optic nerves. In fine, in the inferior vertebral animals, not only the cerebral hemispheres and the optic bed, but even the tubercula quadrigemina and the optic lobes, may be removed without affecting vision—the insertion of the nerve seeming to be in the medulla oblongata.

Spurzheim, in his Anatomy, is disposed to restrict the influence of the quadrigeminal bodies over vision to the two anterior ones which have a direct connexion with the optic nerves. The two posterior ones have somewhat different communications with the encephalon, and though intimately connected with the anterior, cannot properly be considered parts of one and the same nervous mass.

The muscular nerves of the eye, viz. the third, fourth and sixth pairs, and the ophthalmic branch of the fifth are next described, and their connexions with the brain traced by M. Serres. The third pair is inserted in all the classes on the inner side of the peduncles of the cerebrum, behind the eminentiæ mammillares, or the bodies which supply their place in the mammifera, birds, reptiles and fishes. In man and the monkey, it corresponds to the level of the anterior portion of the anterior tubercula quadrigemina; in the ruminantia and rodentia it is at the point corresponding to the anterior third of the tubercles, owing to the volume acquired by these last. The more voluminous in fact the tubercula quadrigemina in this class, the nearer is the third pair to them, and the more removed from the posterior part of the optic bed.

In the mammifera there is a transversal band going from the quadrigeminal bodies and embracing the peduncle; and which seems, according to M. Serres, destined to form a communication between these bodies with the cerebral peduncles or crura.

Spurzheim, in the work already referred to, tells us that the filaments composing the third pair (the motor nerve of the eye) issue from the blackish body of the cerebral legs.

The sixth pair is inserted, to make use of M. Serres's own phraseology, into the base of the anterior pyramid at the point of its connexion with the pons in man and the monkey, though it is not unusual to trace it to the anterior cords of the medulla spinalis; and in some of the mammifera, as the kid, this is the constant ar-

rangement. In all birds this nerve has an insertion identical with that indicated above as prevailing in man. In conclusion, M. SERRES tells us, that the insertion of the sixth pair is not rigorously into the same part in all classes of animals, nor in all the families of the same class.

The fourth pair or *nervus trochlearis* is like the third, invariable in its point of insertion, and is constantly, says the author, implanted into the whitish lamina which forms the valve of VIEUSSENS behind the quadrigeminal bodies of the mammifera and the optic lobes or bigeminal bodies of birds, reptiles and fishes.

The author here inquires into the epoch at which the nerves arrive at or are inserted into the different points of the encephalon, with which they finally maintain permanent connection. We cannot follow him into the details on this subject: but content ourselves with the expression of the fact, that, in the human embryo, and in that of the horse, sheep and ox the eye is well formed at the end of the first month, but yet the optic nerve was at the bottom of the organ, and had not penetrated into the cranium. Towards the end of the second month it enters into the cranium, and is at first inserted by the roots, which are implanted into the quadrigeminal bodies.

From these premises we should say that if an animal comes into the world without eyes it has no optic nerve. Such, says M. SERRES, is the fact, as he has seen it in the young of rabbits and cats. Monsters, which have but one eye, or two confounded into one, have, as shown by GEOFFROY ST HILAIRE, only a single optic nerve, which in this case is more voluminous than in its normal state.

If, again, inverting the proposition, we ask what ought to happen when we see a monster with double quadrigeminal bodies or two pair of optic lobes? If the old hypothesis of cerebral origin of nerves were correct, there ought to be four optic nerves in these cases, but there are, in fact, commonly but two eyes and two optic nerves.

On the principles of eccentric growth of the nervous system, we of course expect that those animals which naturally are wanting in eyes will also fail to possess the optic nerves. Such, M. SERRES assures us, is the case with the mole, the Cape mole-rat and the chrysochlorus of the Cape, the shrew mouse, &c.; and yet in these animals the tubercula quadrigemina are perfectly developed. Were these bodies the root or origin, in place of the point of insertion of

the optic nerves, they ought to be deficient or atrophied. The nerves, repeats the author, go to, but are not derived from the encephalon, as has been hitherto taught.

This branch of the inquiry is carried out into details drawn from comparative anatomy, in the second volume of M. Serres, to which we shall now freely advert, without, however, as yet, losing sight of the first. At page 15, Tome II., he tells us, repeating what he had said in the second part of the first volume, that in the young larvæ of insects the nervous system advances in its growth from the circumference to the centre: that primarily there were two cords in the centre of the larva, which, by their subsequent union, constituted the single one seen in the later metamorphosis of the animal. This *fusion* of the two cords into one does not take place suddenly throughout its whole length: it always begins with the ganglions which are directly before and behind the œsophagus. These bodies exhibit at first a raphe which corresponds to the line of union, and which finally disappears. At the same time that the two ganglions are united into one, the intermediate cords, which connect them longitudinally from above downwards, follow the same course of approximation and adhesion, so as finally to be intimately blended and form really but one cord. From this law we must constantly except the two cords situated on the right and left of the œsophagus, which keeps them apart and gives rise to what anatomists call the œsophageal ring.

In the crustacea, as in the river crab, the half of the nervous cord is separated at its anterior portion: the ganglions, though in apposition, preserve evident marks of their first junction. The same is seen, perhaps still more evidently, in the nymphæ of the silk worm and bee, and in the bee itself.

The primary structure of the nervous system of the mollusca is the same with that of the insects and the crustacea.

The author in this part of his work enters into an examination of causes of the difference in length and size of the central nervous cords in insects, in their larva and perfect state. Sometimes the nervous centre is longer in the former than the latter. The cause of these varieties is found, he thinks, in the adventitious parts of the animal in its first stage of existence, which it loses in its last metamorphosis; and again, in the additional organs with which it is sometimes endowed in its more perfect state.

"The general character of the nervous system of the interverte-

bral animals is in its being symmetrical: more or less separate in the inferior ones, into two longitudinal bands, it is united in the superior ones as in the insects and crustacea.

"This junction of the parts on the right and left constantly takes place by the medium of the ganglions, either by their meeting each other, or being in apposition, or united or confounded together, or by sending reciprocally to each other filaments of communication.

"There is constantly established round the opening of the œsophagus a double communication. This is effected in two ways; either by filaments or the apposition of the pro and meta-œsophageal ganglions.

"The communications between the right and left sides of the nervous system are always direct, similar to the union of the two laminæ of the spinal marrow, or the principal commissures of the cerebral hemispheres. It hence results that all the organs receive their nerves from that part of the nervous system corresponding with the side on which they lie.

"The decussation of the two nervous systems remarked in the cerebro-spinal axis of the vertebral animals does not then exist in the invertebral ones.

"The few physiological experiments which have been made on the nervous system, prove that its action is direct throughout its whole extent, anterior as well as posterior to the œsophageal opening." —Pp. 41, 2.

These points determined, the author next investigates the oft debated subject of what part of the nervous system of the vertebral corresponds to that of the invertebral animals. Before we accompany him through the pages of the second volume in which he pursues this investigation, we must once more take a retrospective course and exhibit his views and observations on the other so called cerebral nerves.

The trigeminal or fifth pair is the one next in order to those which we have already treated of. It was in studying the origin and course of this nerve that M. Serres was led to discover the laws of neurogeny, that is, the eccentric growth and symmetry of the nervous system. The following are the results of his observations. 1. The fasciculi composing the nerve of the fifth are visible in the cranium a long time before their implantation in the medulla oblongata. 2. This implantation is accomplished by two orders of fasciculi, similar to that of the nerves along the spinal marrow, and which may be designated as anterior and lateral. The anterior are analogous to those of the spinal marrow, they are much stronger and more numerous than the others, their insertion

is into the trapezium of the medulla oblongata in man and the mammifera generally, and into the caudex of the medulla oblongata or the spinal bulb of Chaussier in birds, fishes and reptiles. 3. The lateral bands are the fewest in number and least considerable; they reach the medulla oblongata at a later epoch than the preceding ones, and they are inserted into the lateral parts of the peduncle of the cerebellum. They correspond, in the opinion of the author, with the posterior fasciculi of the spinal nerves.

The nerve of the fifth pair has its origin, in conformity with the views of M. Serres, in the muscles of the face, eyelids, mouth and the organs of all the senses, of which it must be regarded as an integral portion. The nerves being always in proportion to the volume of the organs whence they are derived, the extent of the face and of the organs of the senses taken in mass gives the volume of this nerve in the different classes of the vertebral animals. Hence the size of the trigeminal nerve follows pretty closely the progressive increase in the extent of the face from man to monkeys, the carnivoræ, the ruminantia and the rodentia. In the lama and camel, the fifth pair is of an enormous size, so also in the beaver; it is largely developed in the bat, and the mole and mole-rat of the Cape, and the chrysochlorus of the Cape, and the zemni.

In birds, on the contrary, there is a remarkable diminution of size of this nerve corresponding with the smallness of some and absence of others of the muscles of the face. In reptiles it is still smaller, as in the cameleon, crocodile, viper, lizard, frog, &c. It assumes a considerable size in the bony fishes, as in the cod and pike; and in the cartilaginous ones it exceeds all the proportions met with in the vertebral animals.

With this prodigious development of the trigeminal nerve coincides in the squali the appearance of a particular organ, which Jacobson regards as that of a new sense, and in which ramify numerous fasciculi of the fifth pair.

In the mammifera, birds and reptiles, the development of this nerve is proportionate to the size of the internal maxillary artery and its numerous divisions. The beaver has this artery of an enormous size.

The fifth is the special seat of the sense of taste. This, in common with the sense of smell, is connected with the instinct of the preservation of the species: they are both sentinels of nutrition, and hence their relations.

The olfactory chamber and that of taste are so intimately connected together by the bony pieces and soft parts which compose them, that one cannot grow or be diminished without the others participating in this modification. One of the branches of the fifth pair is distributed to the sense of smell, and becomes in a measure the auxiliary of this latter. In fine, we may say that the olfactory and trigeminal nerves are developed in all the classes in a direct ratio to one another, always excepting the cetacea among the mammifera.

The extent of the two senses augmenting with the development of the face, of which they constitute in some measure the frame work, and the cavity of the cranium diminishing at the same time, leads to the inference that the entire volume of the encephalon is in the inverse ratio of the size of the trigeminal and olfactory nerves.

The question started here by M. Serres, whether vision can be enjoyed without the animal's possessing an optic nerve, was examined in our review of the first volume of this work. The author returns to the investigation in the second volume. He contends that the mole, the mole rat of the Cape, the fœtid shrew, the chrysochlorus of the Cape, the zocor and the zemni have no optic nerve properly so called; and that what Gall, Durondeau, Carus, Treviranus, and Bailly had regarded as the rudiment of one is not so in fact. We cannot, from the globe of the eye of a mole, trace a nerve which like the optic is directed to the apophyses of Ingrassias—nor one which goes from this part to the tubercula quadrigemina, nor which decussates the corresponding one on the opposite side. The filaments in question stop short of the eye, and are at the base of the encephalon adherent to the gray matter of the *tuber cinereum*, without in general having any connexion with the small inferior commissure of the brain. In fine, M. Serres denies that these filaments are nervous; their gray colour, perfect transparency, and marked elasticity induce him to consider them as really belonging to the vascular system. It is true that he only succeeded once or twice out of thirty injections in reddening these internal filaments. But again he tells us, that if they are vascular they ought not to be visible in a class in which the vascular net work, which borders the *tuber cinereum* in the mammifera and birds, is wanting—and this is actually what takes place in the reptiles. We do not see in these last the small filaments behind the optic nerve,

nor do we see in the *proteus anguinus*, which like the mole is destitute of this nerve, any of these grayish filaments which have deceived anatomists.

In all the above mentioned animals, the optic nerve is replaced by a branch of the trigeminal nerve. Some of them, as the zemni, are entirely blind; others, as the mole, the mole rat, and the proteus, have a limited power of vision.

That a branch of the fifth pair should confer the faculty of sight, need not excite surprise, when we know that another branch of this same nerve is the one on which the sense of hearing depends in most fishes. Hence the general law laid down by CUVIER, and cited in our former article, (vol. i. p. 144) viz. "that the difference in the functions of the nerves depends rather on the different organization of the parts to which they are distributed, than on their own nature." For, 'are distributed' M. SERRES would say, in which they are formed.

From page sixty-four to page eighty-nine of the second volume, we have some very interesting particulars connected with the functions and diseases depending on lesion of the fifth pair. MAGENDIE, who has led the way in the experiments performed by dividing this nerve in living animals, states that in twenty-four hours after the section, the cornea begins to become opake; in seventy-two hours it is still more so, and the opacity goes on gradually augmenting, so that in five or six days it is of the whiteness of alabaster. Towards the second day the conjunctiva is injected; the iris becomes red and inflamed: false membranes are formed on this latter, and which, by gradually filling up the anterior chamber of the eye, contribute to the opake appearance of the cornea. About the eighth day the tissue of the cornea is visibly altered, its centre ulcerated, and its circumference detached from the sclerotica, the eye is wasted and reduced to a small tubercle. The sight becomes very weak, and almost lost if the nerves on both sides be cut; the animal then moves as if it were blind.

The tongue is insensible on the side in which the section has been made; and on both sides if the two nerves have been cut. In this last case the lower jaw hangs down, and deglutition is very difficult. When a single nerve is cut, half of the tongue becomes whitish, the gums abandon the teeth, which are laid bare.

The pituitary membrane loses its sensibility; it is unaffected by any odorous body, whether this latter be at any distance, or in actual

contact, it is not even excited by corrosive substances, as happens after the section of the olfactory nerve. This difference is explicable by the aid of comparative anatomy, by which we learn that the ramifications of the olfactory nerve seldom extend beyond the ethmoidal cornets, while the extent of the olfactory chamber is chiefly due in animals to the volume of the lower cornets or spongy bones on the surface, on which alone are distributed the filaments of the fifth pair.

Magendie thinks that in addition to the above effects, he has seen a section of the fifth pair followed by loss of hearing, a circumstance explained by the nerve of hearing in certain animals being a division of the trigeminal.

The author next proceeds to give some pathological cases marked by loss of function of the fifth nerve on one side. Among these was one in which there was loss of vision, smell, hearing, and taste of the right side. The subject was a man twenty-six years of age, who for a year or two prior to his entering the hospital of La Pitié, had epileptic fits. These returned frequently after he came under M. Serres's notice; they always began by a convulsion of the right side. On dissection after death, in addition to some thickening and alteration of the pia mater, the ganglion of the trigeminal nerve of the right side was found enlarged, of a yellowish white, and its granulations separated by a small quantity of serum. This change and hypertrophy of the ganglion extended to the three principal divisions of the nerve; the ophthalmic seemed to be the longest affected; the inferior maxillary was rather more altered than the superior. The lachrymal, frontal, and nasal nerves presented their usual appearance. More minute details of the organic changes in the other ramifications of the trigeminal are given, which we forbear transcribing here.

The right optic nerve was a little less voluminous behind the eye than the left. Throughout the remainder of their course these two nerves were identical in appearance.

The cornea of the right eye was opake, and thickened throughout; the iris adherent by its posterior surface; the pupil contracted; and the anterior surface of the iris covered by a false membrane, which adhered to the posterior face of the cornea. The choroid was rather redder, and the vitreous humour seemed less transparent than in the left eye.

Alterations were visible in the pituitary membrane, the gums and the mucous covering of the tongue on the right side. The right ear presented nothing abnormal, either in its internal osseous apparatus or its nerves.

On examining the brain, the attention of M. Serres was arrested by the appearance of the right tuber annulare at the spot corresponding to the insertion of the trigeminal nerve of this side. In place of the usual junction there was found, on raising the brain, a gelatinous yellow matter analogous to that found at the extremity of the nerve, and which last remained free on a level with the superior border of the *os petrosum*. By separating the transverse fasciculi of the pons, traces of this yellow matter were seen to the depth of two lines; at the same time there was distinguishable on the internal side of the gelatinous matter two small white fasciculi in their entire state, and which were laid bare as far as the superior border of the spinal bulb. These fasciculi were continuations of those medullary ones seen on the inner side of the sphenoidal ganglion of the fifth pair. These latter were sound, so that the muscular filaments were natural throughout their whole extent. On the left side the trigeminal nerve was in its natural condition.

In addition to the above changes of the encephalon, the left hemisphere was softened and slightly yellow at its superior surface, especially before and behind. So adherent was its internal surface to the dura mater, that a small part of the cortical substance remained attached to this membrane at the time that the brain was raised to examine its base. It was then discovered that the whole of the middle and posterior lobe was soft and yellow; a change which was traced as deeply as the level of the centrum ovale. The optic bed and the corpus striatum of the same side were rather softer than on the opposite one. The left hemisphere of the cerebellum exhibited an alteration analogous to the corresponding hemisphere of the cerebrum. The left lateral ventricle was more enlarged than the right; the pineal gland was more voluminous and harder than in its normal state.

The two lungs were tuberculous at their summit.

The reader will remember that the epileptic convulsions of this subject always began on the *right* side.

It is not often that we see pathology thus repeating, as it were, step by step, the march pointed out by physiology; yet such

is precisely the course of things in this case as compared with the experiments above narrated.

The application of this knowledge of the nature and location of a disease, as thus pointed out by experimental physiology and morbid anatomy, was soon made by M. SERRES in the treatment and cure of a man and a woman, in both of whom symptoms analogous to those above enumerated were displayed.

The author is inclined to enlarge the domain of the fifth pair, and to place instinctive acts under its dependence. The example of this is furnished in the invertebral animals, which are, he thinks, completely acephalous. In the mammifera also he tells us, that in proportion as the encephalon decreases in size the fifth pair is developed, and with it the instinctive acts of the animal. He would put on the same line in regard to their instinct and its cause, the beaver, the mole, and the bee; that is, in all of these he considers the fifth pair as the source and stimulus of instinct. On the other hand, man remarkable for the development of his encephalon, and the variety and energy of its functions, is the lowest in the scale of instinct, because least favoured in the volume of this nerve. The following inferences terminate the chapter on what M. SERRES calls the concordance of the nervous system in the animal kingdom.

1. In all the vertebral animals, and in man, the fifth pair exerts a marked influence over the action of the senses.

2. The mole is deprived of the optic nerve like the chrysochlorus of the Cape, the male rat, proteus, &c.; and yet this deficiency does not prevent the exercise of vision.

3. The fifth pair seems to be the seat of instinct, or of the acts without reflection in animals.

4. In all the vertebral animals, the energy of instinct seems to be in relation with that of the fifth pair.

5. The cephalic ganglions of the articulated animals being analogous to those of the fifth pair, the instinctive properties are more energetic in this class of beings.

6. The new views which may be revealed to us in the physiological experiments on the nervous system of the invertebral animals, ought to be compared with those on the fifth pair, and the intervertebral ganglions of the vertebral ones.

We must again recur to the first volume of M. SERRES's work,

in order to extract his leading thoughts on the auditory and facial nerves, and the pneumo-gastric, sympathetic, and glosso-pharyngeal ones.

The auditory nerve (*portio mollis*) is formed, in embryos, of separate filaments. In the second month of the human embryo, four, five, six, and even eight filaments could be counted, which towards the fourth month become blended into one; and it is only after this period that the characteristic softness of the nerve is distinguishable.

In birds and reptiles the same filamentary arrangement is seen in the first period of embryo existence. In all, the acoustic or auditory nerve is at this early period found separated from the encephalon, and gradually continuing its eccentric growth, becomes united to the lateral parts of the medulla oblongata.

The necessary connection between the white striæ of the fourth ventricle and the auditory nerve, as laid down by PICHOLOMINI, is not admitted by the author of the work before us, any more than the proportion between this nerve and the grayish enlargement, or ganglion of the tænia, as pointed out by the WENTZELLS and admitted by GALL and SPURZHEIM. In the adult human subject the auditory is implanted on the restiform body of the medulla oblongata. In birds this junction is thrown more backwards.

The facial nerve (*portio dura*) has the same filamentous structure at an early period, which we noticed in the portio mollis; and it is inserted in the same part of the medulla oblongata with this latter, except in being a little more superior and anterior.

Between the auditory and facial nerves we sometimes meet in man, and often in the mammifera, a small isolated fasciculus, which M. SERRES thinks is an accessory nerve to the facial.

We do not meet with the same evident proportion between the development of the face and the facial nerve, which has been stated above to prevail between the former and the trigeminal nerve.

The author, when speaking of the functions of the facial nerve, pays a merited compliment to MM. BELL and MAGENDIE. Its pathological changes generally take place during its passage through the aqueduct of FALLOPIUS: and, continues M. SERRES, in four subjects which I examined after death, in whom the symptoms consequent on derangement of this nerve were the same with those pointed out by BELL and SHAW, there had also existed a deafness more or less complete in the ear corresponding to the affected

nerve. Hence he thinks that the portio dura of the seventh pair has an influence on hearing.

It is in fishes that the correctness of the term facial respiratory nerve, as applied to the portio dura, is clearly demonstrated. Their opercula are the mechanical agents of respiration, and the muscles by which they are moved receive their nerves from the portio dura.

The same laws of neurogeny govern the growth of the pneumo-gastric with that of all the other so called cerebral nerves. In acephalous fœtuses the ramifications of the eighth pair are distinctly traced through the lungs and to the heart and stomach, and if the larynx be entire, the recurrens is so likewise. In bicephalous monsters with double larynx, œsophagus and lungs, the pneumo-gastric nerves are double on each side; but there being at the same time only one heart and one diaphragm, the cardiac and phrenic nerves are single on each side—a fact inexplicable on the current hypothesis of the encephalic origin of these nerves, but readily explained by admitting their origin in the viscera, which they are said to supply. Some interesting observations on monsters are contained in this chapter, but we cannot notice them at the present time.

The accessory nerve of Willis and the hypoglossal or ninth are likewise described, and their origin and eccentric growth traced by the author with his accustomed industry.

The principles laid down by M. Serres facilitate greatly a correct understanding of the true anatomical character of the great sympathetic and of its functions. It is well developed in the anencephali, and of course without the aid of the brain; and is as distinctly seen where the spinal marrow is wanting. It follows constantly the organic changes of the parts to which it is distributed. "It derives, therefore, its origin from the organs; it, like all the other nerves, is put in relation or connection with the spinal marrow and encephalon, though these nervous masses are foreign to its formation." The only strict observable dependence under which the sympathetic is placed, is on the sanguineous system:—aberrations or excesses in the latter being always accompanied by corresponding changes in the former.

The remaining space allowed to us, and this time we are sadly curtailed of our fair portion, will be occupied by a rapid sketch of the second volume, of which hitherto we have only analysed the two first chapters. In the third one, on the "*comparative anatomy of the spinal marrow in the four classes of vertebral animals*," the

author deals too largely in notes of exclamation and periphrase, and we find him repeating the very language used in the first volume; nor is his affected sententiousness more pleasing than his occasional verboseness: both are bad links to his really valuable anatomical experiments and observations.

The hypothesis of the central development of the spinal marrow is, he tells us, irreconcileable with the existence of a central canal throughout its entire axis: a void like this cannot be the primitive source of the nervous system. The capacity of this canal is in the inverse ratio of the thickness of the gray layer which fills up the centre. In the human subject, in its perfect state, the canal is entirely obliterated. In the carnivora it is very evident, and in the pachydermata and ruminantia it is still larger, and the gray matter proportionably thinner.

The spinal marrow is then formed, in all the vertebral animals, of two cylinders, incased in some measure in each other; the external one is formed of white, the internal of gray, brown, or reddish matter, according to the animal or its age, in which the observation is made. These two cylinders are not developed in the direct ratio of each other, as believed by some anatomists.

Each segment of the spinal marrow is developed in the direct ratio of the volume of the vertebræ by which it is surrounded: these latter are proportionate to the ribs which they support; the ribs to the muscles inserted in them; the muscles to the arteries and nerves.

There is a marked contrast between the inferior region of the spine of birds and mammifera. In the former it is fixed, and composed of precisely the same number of pieces: the spinal marrow terminates in a uniform manner. In the latter the variations of both these parts are as numerous as are the diversities of tails. The very reverse is seen in the cervical region of these two classes. In the mammifera it is with one or two exceptions uniform. In birds the varieties of it are great.

An explanation of the formation of the cauda equina is given by the author, but its length prevents our introducing it here. He attributes this appearance to what he calls the rise of the spinal marrow in its case.

The enlargements in different parts of the spinal marrow of animals always correspond with, and are proportionate to the limbs or wings or fins, as the case may be.

Some interesting particulars are given on this occasion respecting the metamorphosis of the tadpole.—Pp. 134. 6.

The nerves of the trunk and the olfactory optic and trigeminal nerves are developed in the four classes in the direct ratio of the size of the spinal marrow, excepting the olfactory nerve for the cetacea, and the optic for the mole, &c.

In respect to priority of formation of the different parts of the central nervous processes, the spinal marrow is first formed.

The spinal arteries have a distinct and separate existence from the encephalic ones, and of course the spinal marrow can be, and is formed independently of the brain.

Chapter fourth is on "*the comparative anatomy of the medulla oblongata in the four classes of vertebral animals.*" The author begins by asking what are the boundaries of the medulla oblongata? All anatomists are now agreed in regarding it as the central point of the encephalon either for the termination or beginning of its various radiations. Since the time of LORRY, physiologists uniting in this sentiment have spoken of it as one of the most energetic centres of action of the encephalon. The medulla oblongata, like the spinalis, is in the embryo state at first smooth; after a time the eight bands are formed in relief, to which the anatomical terms have been given of *anterior pyramidal bodies*, *olivary cords or bodies*, *posterior pyramidal bodies*, *and restiform bodies*. There is great inequality in the development of these bodies in the different classes of animals, and even in the different families of the same class. Their comparative anatomy is given in detail by the author, from page 191 to 218.

In man the decussation of the pyramidal bodies is evident; in monkeys and the cetacea less so; in the carnivorous animals, the pachydermata and the ruminantia, it is in regular series less obvious. The pyramids are strictly parallel in fishes and reptiles.

Physiology confirms this view. In fishes and reptiles the action of the brain on the medulla oblongata and spinalis is direct; in birds and the mammifera it is crosswise; that is to say, that a lesion of one side of the brain of the former is followed by impeded function and disorder of the same side of the body, whilst in the latter the lesion of the brain affects the opposite side of the body.

This remark applies to the anterior pyramids which alone decussate; the posterior ones are always direct in the mammifera, birds, reptiles and fishes.

There is not, M. Serres thinks, any direct proportion between the medulla oblongata and the cerebral and cerebellar hemispheres, whatever may prevail in regard to particular portions. The anterior and posterior pyramidal and the restiform bodies are, he tells us, in a direct development with the olfactory, optic, and trigeminal nerves; whilst the olivary bodies are in an inverse ratio to these same nerves. The anterior pyramids are generally in direct proportion to the medulla spinalis.

We are next presented with "*physiological and pathological corollaries on the spinal marrow and medulla oblongata.*" Of these the following are worthy of repetition.

Sensibility or the power by which sensations are transmitted to the mind, and irritability or the power of causing movement, are two properties inherent in the nervous system. One may be lost and the other retained. The posterior branches of the spinal nerves are more sensible than irritable; and the anterior ones more irritable than sensible. The cords of the spinal marrow adjoining these roots participate in the qualities of these latter respectively. The physiological experiments made by MAGENDIE to prove this latter point are confirmed by some pathological facts adduced by M. SERRES. One case however is recorded by him adverse to this belief. It was of a paraplegic woman, in whom sensation in the thighs and legs was preserved. It was found after death that the posterior cords of the spinal marrow were the only ones altered in three different places from below the middle of the dorsal region. This fact lends probability to the opinion of ROLANDO, that the posterior spinal cords are the motive, whilst the anterior are the sensitive ones.

The nervous system and of course the spinal marrow is foreign to the circulation before birth; and in fœtuses where the former have been wanting the latter still went on. If the egg of a hen, duck or turkey be opened at the third day of incubation, when we can see the movements of the heart, and we destroy the brain and spinal marrow, the heart still continues to beat as before incubation goes on, and the fœtus acquires its usual developments.

Respiration is more directly influenced by nervous agency. Every change of the dorsal region of the spinal marrow in the human subject influences the respiration, and this the more promptly the higher we ascend from the middle of this region.

Pathology first, and subsequently experimental physiology, induce the author to believe in the action of the spinal marrow on the in-

testines, bladder and genital organs. If the disorganization of this cord be at the lower enlargement, the larger intestines are more particularly affected, as by paralysis and diminished calibre. At the lower third of the dorsal region the end of the small intestine feels the effects of the pathological alteration; at the middle the ileon is interested, and at the upper third one half of the jejunum is the sufferer.

If we expose the spinal cord of an animal and inject an irritating liquid between the dura mater and the nervous substance, we see accelerated movements of the whole intestinal canal, when, the abdomen being opened and the mesentery cut, the intestines are spread on a horizontal plane.

The cervical region acts on the stomach and small intestines; but the stomach is chiefly affected by experiments on the medulla oblongata and cerebellum.

The anterior pyramidal bodies only act on the voluntary movements.

The olivary bodies influence in a special manner the movements of the heart. The contractions of this viscus have been irregular and jerking in chronic alterations confined to these bodies alone.

Sudden effusions of the restiform bodies paralyze the lungs; and it is probably because the restiform body is often altered at the same time with the cerebellum that the origin of the respiratory power has been placed in this latter.

The band intermediate to the restiform and olivary body, has a more immediate influence over the stomach. When after removing the cerebellum we irritate the medulla oblongata, and reach this part, we produce very remarkable movements of the stomach: it is contracted, and the pylorus is brought nearer to the cardia, but in the next moment it resumes its pristine capacity. This effect is produced, but in a more limited degree, by irritation of the olivary and the internal portion of the restiform body.

From experiments of this nature M. Serres infers, that the anterior cords of the spinal marrow are the seat of antiperistaltic movements.

Stammering follows an affection of the anterior portion of the medulla oblongata below the olivary bodies. M. Serres says, that he has never seen stammering in paralytic women; when present it was always in men. When this infirmity prevails in families, it always attacks the males. The author has notes on more than five

hundred families in which stammering has prevailed, and yet not a single example of a female being affected by it.

Among the inferences drawn from the history of an organic disease of the spinal marrow in the work before us, are the coincidence of irregular movements of the heart with primitive lesions of the anterior cords of the spinal marrow; and the more especial influence of the posterior cords on the lungs and respiration.

We must not omit the copious notices of the mode of formation and growth, and of the comparative anatomy of the *tubercula quadrigemina* contained in the fifth chapter of M. SERRES's second volume. He concludes by telling us, that the optic lobes of birds, reptiles, and fishes, are analogous to the tubercula quadrigemina in the mammifera. They are hollow in the former, and solid in the last.

The tubercula quadrigemina are of less importance than the other parts of the brain in the mammifera; whereas in reptiles they are paramount to the cerebellum; in birds they form a pair of lobes still more important even than in reptiles; whilst in fishes, especially the bony ones, they constitute the principal part of the encephalon, and predominate over all the others.

The sixth chapter is on the cerebellum. In the human embryo the two cerebellar laminæ are not visible until the beginning of the third month; they are then separate, and are directed towards each other on the floor of the fourth ventricle. At the expiration of the third month the union is complete, and the cerebellum constitutes a single organ.

In the mammifera the pons VAROLII is developed in a direct ratio with the lobes of the cerebellum, the corpus ciliare and the olivary bodies. It is on the contrary in size in an inverse proportion to the spinal marrow, the inferior and superior peduncles of the cerebellum, trapezium, valve of VIEUSSENS, the tubercula quadrigemina and the median lobe of the cerebellum.

The same reasons which have prevented our analysing in detail the preceding chapters, forbid our dwelling long on that in which the author treats of the comparative anatomy of *the cerebral hemispheres and the olfactory lobe*. He has a most unfortunate love of circumlocution when he introduces novelty of nomenclature or opinion, so as to render it no easy matter for us to state precisely what he means. Sometimes in the midst of a paragraph, which was begun to explain the situation and growth of one part of the ence-

phalon, we find another brought in and made a subject of incidental allusion or comparison before he had explained its character or position. He tells us a great deal about the olfactory lobe, how much it has been overlooked, what relation it bears to other parts of the cerebrum; but he omits to state clearly and succinctly what it is. The very section of the chapter, which is headed *olfactory lobe*, begins by the author telling us that he has already shown its importance and influence. He has moreover a marvellous fondness for interrogating, which, with him, is not so much a way of expressing doubt, or asking for information, as a fashion of intimating that these questions are his opinions. In fine, to tell the whole cause of our complaints against M. SERRES, as a writer, he is excessively affected, we might say infected, with the two fold desire of reasoning *à la Socrate*, by asking questions, and of fine writing; when, in place of all this, he ought to be simply narrating what he has seen and studied of the anatomy of the nervous system.

The olfactory lobe may be regarded as the upper and anterior terminal portion, somewhat swelled into bulbs, of the cerebro-spinal axis. It is, in some fishes, far in advance of the cerebral hemispheres; in others it is in apposition with these latter, which it almost equals in volume. In reptiles its position is various, sometimes being removed from the cerebral lobe and joined to it by a pedicle; at other times it is directly contiguous. In birds the olfactory lobe is situated at the base, and before the anterior cerebral lobe, and is pediculated. In the mammifera it exhibits the same varieties, being largest when it is directly contiguous to the cerebral lobe. In man it is at its minimum size.

Much is said by the author of the optic and sphenoidal lobules, and the lobule of the hippocampus. The first, or optic, he describes as a particular element of the encephalon, situated behind the *kiasma* of optic nerves, to which it is closely united: it has a flattened and triangular shape in man; its base is applied to the mammillary eminences; its summit is incased behind the optic nerves. It is much larger in monkeys than in the human species. The optic nerve has a very close connexion with the optic lobule, several medullary filaments going from the substance of the latter to the kiasma of the nerves of vision. The sphenoidal lobule is the inferior prominence of the middle lobe in the sphenoidal fossa of the base of the cranium; and the lobule of hippocampus is that circumscribed outwardly by the external root of the olfactory pedicle.

The chapter concludes with a statement of the proportions of the different parts of the cerebrum to each other. Of the lobules of which the cerebral lobes are composed in the mammiferous animals, the most important are the sphenoidal, and that of the hippocampus. The sphenoidal lobule is developed in a direct ratio to the corpus callosum, and inverse to the fornix and its dependencies. The lobule of hippocampus, and the olfactory lobule, are proportionate to each other, and both are developed inversely to the tuber annulare and the hemispheres of the cerebellum, and in direct proportion to the median lobule of this latter, the trapezium, the tubercula quadrigemina, the nerves of the senses, and the spinal marrow.

The eighth chapter is entitled "*physiological and pathological corollaries on the cerebellum, the tubercula quadrigemina, and the cerebral hemispheres.*" After stating the various opinions held by physiologists respecting the function of the cerebellum, the author gives his belief of its influence over the generative faculties. The reasons for this are found in a great number of pathological facts which he adduces. They are cases of organic alterations of the cerebellum, and especially of its median lobe in persons who had been subject, if males, to frequent and violent erections, and if females, to nymphomania or other excitement of the genital organs.

Experiments on animals are also adduced, in which a sharp instrument run into the cerebellum caused erection. Still more, if the irritation be directed to the lower or lumbar portion of the spinal marrow, there will be, as in the instance of Guinea pigs, ejaculation. The integrity of this part of the spinal marrow seems to be as necessary to the contractility of the vesiculæ seminales as it is to that of the uterus, since in paraplegic women, when pregnant, there is no expulsive force for the completion of labour—the organ is inert and the os tincæ undilated. If a section of the spinal marrow at the lumbar region be practised on pregnant rabbits, Guinea pigs or bitches, some time before the period of gestation is complete, labour will not take place. If the section be made during the labour it is immediately arrested. Irritation of the spinal marrow at this same part produces abortion.

The influence of the cerebellum over voluntary movements would seem to be fully made out by M. Serres; first, by pathological facts which have come under his own notice, and secondly, by physiological experiments on different animals. In the first he found

that when a lobe of the cerebellum was altered by softening, or abscess, or bloody infiltration, there had been during the life-time of the individual, hemiplegia, partial or complete, of the opposite side.

In the cerebellum resides also the faculty which combines the movements necessary for leaping. It is more especially on the lower or posterior limbs that the cerebellar influence is most marked.

It would seem from the history of subjects of general paralysis and their post mortem examinations, that general immobility is the consequence of the destruction by disorganizing inflammation of the annular protuberance or pons VAROLII. In all of them the most acute pains had preceded the loss of sensibility which accompanied that of mobility. In all, the pupil was contracted or fixed, according to the state of repose or agitation of the muscles.

In acute encephalitis (ataxic fevers) the inflammation of the annular protuberance produces rigidity of all the limbs and permanent contraction of the pupils.

The phenomena, consisting in loss of sensibility, as of sight, smell, hearing and taste, are referrible to the destruction of that part of the annular protuberance in which the fifth or trigeminal nerve is inserted.

In two of the cases recorded by the author there was a remarkable impulse to run forward at the beginning of the attack, which terminated in complete paralysis. In these persons the pons was destroyed throughout its entire depth.

Experiments on animals afford nearly similar results to the foregoing. An interesting one consists in removing from a mammiferous animal the cerebral lobes, the tubercula quadrigemina, and the cerebellum, and to leave intact only that portion of the pons which is above the insertion of the fifth pair. In this condition, the animal, with only the basilar segment of the encephalon remaining, still possesses a regular series of vital actions: the respiration and circulation are freely performed, though rather more hurried than natural. Sensibility is preserved; the animal feels when it is pricked, and has the consciousness of this sensation and the will to avoid it; since it moves its paws, trunk and tail with regularity, without, however, being able to walk; it opens its mouth to cry without producing the sound; it hears, feels, and even seems to taste the substances presented to it, but its sight is lost.

Passing over many very interesting details of pathology and experimental physiology, which serve so happily to elucidate the true

nature of the functions of the tubercula quadrigemina and the cerebral hemispheres, we must close this article by giving to our readers the following inferences of the author. He designates by the term exciter, the part or point in which the dominance of action seems to reside.

"1. The inferior enlargement or bulging, that is, the lumbar region of the spinal marrow, is the exciter of ejaculation and contraction of the uterus, bladder and large intestine.

"2. The dorso-costal portion is the exciter of the small intestines and the movements of the ribs.

"3. The cervical region is the exciter of the mechanical agents of respiration, and particularly of the diaphragm.

"4. Moreover, the anterior cords of the spinal marrow seem to be the *chief exciters of movements*, and the posterior cords the *principal exciters of sensibility*.

"5. The basilar segment is a centre of excitation. The olivary body is *the exciter of the movements of the heart;* the restiform body *the exciter of pulmonary respiration.* The cord which separates these two bands is *the exciter of the stomach.* The excitations of preservation and nutrition are thus concentrated in the inferior limits of the segment. (*Organ of nutrition of* WILLIS.)

"6. The superior part of the segment is *the exciter of general sensibility and mobility.* (LORRY.) The trapezium is *the exciter of the movements of the face.* The bands in which the trigeminal nerves are inserted are *the exciters of the apparatus of the senses and of instinct.*

"7. The quadrigeminal bodies, regarded by WILLIS as the *organs of preservation*, are *the exciters of the association of voluntary movements* or of *equilibration*, and also the *exciters* of *the sense of sight* in the three inferior classes of animals.

"8. The median lobe of the cerebellum is *the exciter of the organs of generation.* Its hemispheres are *the exciters of the movements of the limbs*, and more especially of the pelvic members. The cerebellum is *the exciter to jumping.*

"9. The optic bed is the exciter of sight in man and the mammifera. Its radiations are *exciters of the movements* of the *thoracic* or *upper extremities*, and subsidiarly *exciters of respiration.*

"10. The radiations of the striated body are *exciters of the pelvic members.*

"11. The olfactory field is *the exciter of the sense of smell.*

"12. The demi-centrum ovale is *the exciter of voice and speech;* and moreover the cerebral lobes are *the exciters of the intellectual faculties.* These excitations are the different instruments by which the mind displays its manifestations."

No stronger evidence need be adduced of the patience with which

M. Serres has prosecuted his inquiries than the numerous tables scattered through the two volumes of his work, which exhibit the comparative size of the cerebral nerves, and of the several portions of the cerebellum and cerebrum in the different classes of animals and the individuals of each class. In enlisting pathology to aid and support experimental physiology, he has taken the only true method of advancing both to their true station as adjuvants to practical medicine.

Medical Literature.

ARTICLE XIV.—RETROSPECTIVE REVIEW.—*Œuvres de Médécine Pratique* D'ALEXIS PUJOL, *&c. Paris*, 1823, 4 *vols.* 8*vo.*

As usual, we commence by saying, that we do not intend to analyse the whole four volumes of M. PUJOL's works in this short article. These volumes contain his memoirs on chronic inflammations of the viscera; the treatise on lymphatic diseases; the art of exciting or lessening fever; cutaneous diseases; hereditary diseases; scrofula; mineral magnetism; epidemics; miliary fever; hydrophobia; rickets; puerperal fever; hepatic colic, &c.

Our intention is to confine ourselves to some quotations from, and remarks upon, his first chapter; in which his views of the nature of irritation and inflammation are detailed.

In Chapter I. of the treatise of chronic inflammations of the viscera, M. P. says,

"I have no wish to discuss the merits of the more or less ingenious opinions by which different physicians, both before, and since the discovery of the circulation, have endeavoured to explain the phenomena of inflammation; and upon which they have founded the nature of the curative indications offered by this class of diseases. I shall content myself with communicating, as briefly as possible, my own ideas in relation to this diseased principle."

Those who are familiar with the history of medicine, will perceive the real importance of correct views of the nature of inflammation, since upon some inflammatory or irritative modification of action in the sanguiferous vessels, are founded many of our most important practical indications, in a vastly comprehensive circle of diseases: we hope therefore to be found in the line of our duty as editors of this journal, while exhibiting to our readers the sentiments of one of the most considerable of those authors who have written on this very debatable subject. Before we proceed, however, we

propose to extract from a work, of the highest authority and excellence, the following account of the discussions heretofore had on the subject.

"After the vital power of the vessels had been established by STAHL and his disciples, the phenomena of local inflammation were referred to this action, and as all the natural operations of the arterial system seemed to be augmented during this state, so it followed, almost as an obvious consequence, that inflammation essentially consists in increased action of the capillaries. A strong objection to this supposition was, however, quickly perceived, that the effect of the vital action of the vessels is contraction, while, as we observed above, the very essence of inflammation consists in an increase of the capacity of the vessels. But the ingenuity of the physiologists was not baffled by this difficulty; various means were invented to accommodate the theory to the facts, depending upon the presence of some obstacle which the blood was conceived to meet with in its passage through the vessels, which, at the same time, was not incompatible with their increased diameter. BOERHAAVE attributed the obstruction to a change in the texture of the blood itself, by which it became more thick and viscid, acquiring, what he called, a state of lentor, and to this lentor he added the further hypothesis, that the increased action of the arteries forces the larger particles of the blood into vessels, which, in their natural condition, are too small to receive them. This constitutes the *error loci* of the mathematical physiologists, and by the lentor and *error loci* were the phenomena of local inflammation explained by BOERHAAVE and his numerous disciples, until this, like most of their other speculations, was assailed by the powerful genius of CULLEN. In place of the mechanical doctrine of BOERHAAVE, CULLEN substituted his favourite hypothesis of spasm; for he admitted the increased action of the vessels in local inflammation, while he was aware, that without some counteracting circumstance, this increased action would produce effects totally inconsistent with the actual phenomena. We shall, however, find, upon due reflection, that the spasm of CULLEN is equally unfounded, and perhaps even less intelligible than the lentor and *error loci* of the BOERHAAVIANS; and accordingly his explanation has been generally regarded as incomplete; yet since his time no regular attempt has been made to reconcile the increased action of the vessels with their enlarged diameters."

"In this dilemma a totally different view of the question has been taken, according to which, local inflammation is to be attributed to a diminished action of the capillaries. This *hypothesis*, which appears to have been originally proposed by VACCA, an Italian physiologist, about the middle of the last century, was first brought forward in a clear and consistent form by MR ALLEN,

who, for some years, lectured in Edinburgh upon the animal economy; it was adopted by Dr Wilson Philip, who performed a series of experiments in support of it, and has since been embraced by Dr Parr, Dr Thompson, and Dr Hastings."*

We may add that this doctrine is now taught by Dr Chapman, professor of the practice of medicine in the University of Pennsylvania. Dr Bostock, author of the above extract, is disposed to favour the theory of increased action.

If, in any case, we have ascertained a law, by the operation of which a full and ample explanation of certain natural processes can be made out, that is a bad sort of philosophy which seeks for another and directly contrary law to explain the same processes. We want no other principle than that of the attraction of matter to explain the laws of motion of the heavenly bodies, the ten thousand conflicting attractions of which are so harmoniously distributed and arranged, that each star and each system retains its relative situation and influence in the whole vast and complex arrangement. We want no repulsive energy to keep the planets from falling into each other, and disturbing the great relations of the whole system. Now, if it be consonant to the voice of reason and common sense that one vital principle of a contractile nature, (a principle which, as Glisson, Haller, and M. Broussais assert, tends to condense and approximate all the particles of a living being,) is adequate to explain all the visible or appreciable motions that occur in its vital economy, it is a work of supererrogation to look for a principle of an expansile nature to aid us in making the very same explanations.

The animal economy consists of many kinds of tissues, of which the several organs are composed; and these, by chemical analysis, have been resolved into three principal ones, to wit, albumen, gelatine and fibrin. Some of the tissues are composed mostly of albumen, some of gelatine, and some of fibrin, and it has been conceded that our muscles are composed chiefly of fibrin; but then these several substances are derived from one, viz. from albumen, which in a different degree of animalization becomes gelatine, and in another degree fibrin.

When we merely touch a stone, a piece of paper, or a table with our fingers, or the point of a needle, we do not excite in those sub-

---

* Bostock's Physiology, vol. i. 338.

stances any change or tendency to change; but when we so touch certain living substances we do produce in them a modification of their density—we excite in them either sensation or motion, or both. The question here is, what is the nature of the motion we excite? Suppose it be a muscle, or an intestine, or a bladder, or any other organ whose movements we can observe, do we cause the muscle to stretch itself out lengthwise? Does the intestine expand? Does the bladder spring open? No—the effect of stimulation is shown by their contraction. When a muscle is elongated, or the stomach distended, or the bladder dilated so as to reach near the navel, it is owing to the antagonism of another muscle, or the presence of food, air, urine, none of these effects being capable of production by any intrinsic, inherent forces of the fibres of which they are composed; the action of those fibres only tend to contract these organs. All stimuli act by increasing the disposition to contraction, or condensation of the part subjected to the immediate influence of such stimulants. It seems to us very strange, after the admission of these facts by qualified physiologists of whatever name or nation, that some of those very physiologists should set up, as a plea for the doctrine of increased action, that our tissues *expand* when stimulated. The effects of stimulants or irritants are shown, say they, in the direct expansion of the tissues subjected to stimulation or irritation. But this is a new doctrine, one which has received but few followers as yet in this country, and which we are persuaded can not stand the test of a fair and impartial criticism.

It is a doctrine uncalled for by the necessities of the case, and has arisen out of the ingenuity of the gentlemen, who seeing calor, dolor, tumor, rubor, in inflamed parts, are resolved at all events to regard them as the products of invigorated action of the sanguiferous vessels of the part in which they are manifested.

We hope to show by sound reasoning and by reference to the practice pursued in the treatment of inflammations, that the advocates of the theory of diminished action of the vessels in inflammation have taken the really tenable ground in the controversy.

Since we have had the benefit of BICHAT'S analysis of the tissues, great facilities have been afforded in the formation of correct pathological opinions; and yet not a little inconvenience and error have arisen from a disposition to simplify too much, to analyze too far. This inconvenience has been particularly felt, we imagine, in the discussions on inflammation, where the blood vessel system has

been regarded as too exclusively the seat and throne of the inflammatory affections. Into the composition of any part susceptible of inflammatory action, there must necessarily enter a very large proportion of nerves, absorbents and exhalants; and yet these are, for the most part, overlooked altogether, as having little concern in those processes. But a mere advertence to the anatomical structure of such parts should suffice to convince us, that they perform a very important role in all inflammatory affections; a role scarcely less important than that of the capillaries. It is manifest that no inflammation can exist without the coexistence of blood vessels, exhalants, nerves and absorbents, which, with the cellular tissue, constitute the *solids* of the inflamed part.

The sanguiferous apparatus consists of the arteries, capillaries, veins and heart.

Some physiologists are of opinion, that the blood is contained entirely in vessels, while others suppose that there is a point at which the blood ceases to flow in tubes, but spermeates the substance of our organs; or, in other words, enters freely into their parenchyma, and exists in an extra-vascular, or, to use a technical phrase, an extravasated state.

As for us we dissent from this latter opinion. 1. Because there is no known method by which such extravasated blood can be returned into the circulating system, save that of the absorbent vessels. 2. Because the microscope shows us vessels of such tenuity that one globule only can enter their calibres, and if this be so there can be no occasion for an extra vascular circulation. 3. Because we see on membranous surfaces, excited into inflammation, that red globules come to flow in definite tracks or courses, which we may fairly suppose to have previously been so small as to have conveyed only white and transparent fluids. 4. Because when blood is permitted to escape from open vessels and diffuse itself among the tissues, although urged forwards by a force doubtless equal to that which is supposed to drive it through the parenchyma, it nevertheless becomes decomposed and produces a diseased state called ecchymosis.

As we do not admit the parenchymatous circulation, which is asserted only on hypothetical considerations, and is not susceptible even of a demonstration from analogies, it follows that we regard all the blood of the body as contained in appropriate vessels; and, consequently, that there are continuous columns of blood, extended

from the heart through the arteries, capillaries and veins, back to the heart again.

If the above be a correct view of the facts, it must follow as a corollary, that when any part or section of one column of blood is moved forwards, 1st, either the whole column must move, or 2d, that some portion of the vascular parietes, within which it is restrained, must yield to the lateral pressure, and that such portion must be *dilated*.

Let us suppose the column of blood to be contained and limited within a non-elastic cylinder, as of iron, then every reader of this article would agree with us, that the forward motion of *any part* of that column would, by a continuous impulse, occasion the *whole* column to move, since the fluid is incompressible.

The heart, being placed in the centre of the vascular system, should be regarded as a real hydraulic machine, moved and set in action it is true by vital forces, which constitute its power, but nevertheless, it is a bona fide hydraulic engine. A lever is not the less a lever because it is moved by my muscular power set in action by my volition. The modes by which its powers are applied are inscrutable. It is highly probable that we never shall know the true source and principle of the heart's motion, or the means by which that principle is combined with and adapted to the matter of which the heart consists. It suffices us to know that the heart may be influenced either to augment or diminish its action by various means within the control of the physician. We have various means of causing the heart to act more vigorously or less so according to our pleasure.

It has been clearly shown by authors of credit, that when the ventricles of the heart react, they empty into the vessels a certain quantity of blood, and that the vessels receiving it do not, except it may be in the very large trunks near the heart, yield to the lateral pressure in any degree that is visible to the naked eye; but that the blood passes forward through the vessel without distending it or increasing its diameter; and further, it will be admitted that the pulsations of the arteries take place at *very nearly* the same instant of time throughout the whole extent of the arterial system. Thus, the stroke of the pulse is felt nearly at the same moment in the anterior tibial and in the carotid artery. This goes to show that the blood constitutes a continuous column; for if a column of blood reaches from the heart to the instep, then an ounce or more of blood thrown

into the aorta will cause the whole column to move forward at nearly the same instant of time. But, in addition to this, it may be relied on as a fact easily to be demonstrated by the microscope, that even in the capillary vessels the blood is often, *not always*, observed to move forwards per saltum, and that the same fluid sometimes leaps per saltum even from the veins in venesection, showing that the power of the heart is felt or propagated throughout the vascular system.

No calculations deserving of confidence have been or can be made as to the force exerted by the heart in its systole—it must be very great. 1. The vessels are always full during life; whatever be the quantity of blood they may contain. They press on the blood as closely after twenty ounces have been lost by hemorrhage as they did before it took place. 2. They have a perpetual tendency to lessen their calibres; if blood be drawn from them they will still press on it with their sides. 3. They have no power to open or dilate their calibres, but like all other hollow contractile tubes they must be kept open by an antagonist force. The same is true of the stomach, the intestines, and the bladder, which are kept open by gases, food, drink, urine; they never open of themselves. The vessels then are perpetually antagonizing the heart, whose contractions keep them full. The valves of the aorta and those of the veins prevent a retrograde movement of their fluid contents, and they necessarily urge the fluid forwards in a continual stream; so that, as the blood escapes in a forward direction, the power of the heart and the resistance of the vessels are kept in exact equilibrium.

We have no desire to stir again the oft disputed question of the vital contractility of arteries. We believe them to be so endowed; but we are met on the question of the same property in the capillary vessels by the free consent of all parties. In the present discussion it is a matter of absolute indifference whether our opponents admit the arteries to be du domaine de la sensibilité et de l'irritabilité or not; they may regard them as non elastic, or even copper cylinders, if they so please.

To proceed: The capillary system of vessels is eminently irritable, as seen in their constant alternations of redness and paleness, turgescence and contraction; they are affected by cold and heat, by stimuli of various kinds, mechanical, chemical and moral; they are now dilated and now contracted, and yet every capillary tube contains a column of blood which reaches to the heart, and can not re-

trograde, because the valves of the aorta oppose such motion; there is no vacuum in it. The blood pushed into it from the arteries tends perpetually to dilate it laterally, and if its power of resistance were not always equal to the impelling force it would be dilated. A vigorous and free action of the heart is manifested in increased colour of the membranes—while a weak heart occasions paleness of those membranes.

Let the question be now asked, why are the capillary vessels fuller at one time than another; why does the membrane on which they creep look redder at one time than at another? The answer assuredly is, because they contain more blood, they are larger at one time than another, they are dilated more, they have received more blood from the heart and arteries.

This is the place where the two parties to this question separate. The advocates of VACCA's opinion asserting that increased relative power of a set of capillary vessels would not tend to admit more blood into them, would not make them redder, or more dilated, but would have a directly contrary effect; that by antagonizing *excessively* the force which brings the blood into them, they would become smaller, paler and more contracted; while the advocates of increased action say, that irritation excites the irritable solids, in that way dilates the capillaries, and occasions an attraction, an inviting (*appel*) of blood from the surrounding tissues to the irritated point. Irritation, say they, occasions increased action, which increased action is manifested by increased heat, colour, size, and sensibility. Let us now see what M. PUJOL has to say on this topic.

After speaking of the old definition of inflammation, (heat, pain, swelling, and redness) as not satisfactory, he proceeds to say that HOFFMANN announced the existence of what are now called subacute inflammations, as unaccompanied in some tissues with these pretended characteristics.

"BAGLIVI followed HOFFMANN, and asserted, from his own observation, that inflammation of the most sensible parts, such as the pleura, sometimes existed without any apparent sign of heat or pain; and what is more, without any febrile action. This observation of the Roman physician has been since confirmed and generalized by a very great number of other physicians: so that, among the signs formerly regarded as characteristic of the inflammatory state, not one can be estimated as such, save swelling and redness of the inflamed part. And even these two latter signs are extremely equivocal, since, according to LUDWIG, it is easy to confound an engorge-

ment of the veins with inflammatory engorgement, though the redness be the same in both cases, and since a part may swell and be much enlarged without a shadow of inflammation. Besides, when inflammatory disorders exist in the interior of the body, it is not always possible, far from it, to assure ourselves of their existence by their volume alone, which is often infinitely small; and, on the other hand, how shall we determine by their colour the nature of disorders in those parts, inasmuch as they are wholly out of sight?"

"In a work of this kind, in which I am to treat of a kind of inflammatory diseases so obscure and undefined that their very existence is regarded by some persons as problematical, I think I ought to reject as uncertain and faulty those pretended characteristic signs that are not characteristic; and acquire concerning inflammation in general more just and precise ideas than have been hitherto entertained."

"In my opinion VAN HELMONT has approached nearer than any one else to a true idea of the causes, and of course, of the nature of inflammation. To the formation of this disease, the concurrence of two things appeared to him to be necessary; 1. The local action of an acid stimulus upon a sensible part; and, 2. The afflux of arterial blood towards the part kept in a state of irritation by this stimulus, which, by a bold metaphor, he loved to designate under the title of the thorn. According to the principles he had adopted on this subject, as soon as his acid thorn began to act on the flesh or viscera, ARCHEUS became enraged, and directed the current of blood upon the part irritated: hence the engorgements, distensions, agitations, and, generally, all the ordinary symptoms of inflammation."

"If we substract from this theory of VAN HELMONT the acid quality which he gives exclusively to his inflammatory thorn, and give to his ARCHEUS, which is nothing more than the *Nature* of HIPPOCRATES, and the Vital principle of the moderns, a little more regularity in the exercise of his tutelary action; and if we try to acquire more precise ideas concerning the circulation of the blood, and the structure and functions of the parts susceptible of inflammation, we may easily, if I mistake not, seize the real characters of those sanguineous derangements, which constitute inflammatory diseases."

"In the first place, I believe with VAN HELMONT, that a condition, necessary in all inflammation, is the action of a fixed and stimulating cause on an irritable and sensible part. But this local action does not alone constitute inflammation; it is only its *principle*, and its occasional cause. However, this stimulus already occasions in the living organs which it irritates, certain constrictions and crispations, which contract and even efface the capillaries that are most in reach of its action. This alone may constitute

the matter of a simple, cold obstruction: for in this case, as HALLER has proved on the vascular capillaries of frogs, the globules stop, and adhere to each other, and do not flow back, except partially, into the free arterioles of the neighbouring tissues. On the other hand, the absorbent orifices, situated in the affected part, become contracted by the irritation, and either do not take up at all, or at least they take up imperfectly, the mucous and adipose contents of the cellular tissue; the consequence of which is, they stagnate, and gradually accumulate in that tissue; by the continued action of these two causes, and especially the latter, there must be gradually formed a tumour, rather lymphatic than sanguine, and whose essential characteristics will be inaction, indolence, and coldness. Such indeed is the origin and nature of a great variety of glandular and visceral obstructions, which, produced by the secret deposition of acrimonious and morbific matter, commonly resist the most boasted aperitives, and at last yield to the methodical exhibition of narcotic poisons, which act in such cases only by placing the absorbent orifices, and the lymphatics, and sanguine capillaries, in a state of relaxation (*detente*)."

We invoke the candid and dispassionate judgment of the reader upon this plain and unvarnished statement of facts, by the learned and sagacious PUJOL. Even those who deny the HALLERIAN doctrine of irritability, and who, going farther than HALLER, assert the existence of vital contractility in tissues where neither fibrin or muscular fibre can be detected, we invoke them to show, how the first consequences of irritation can be other than those which have been above detailed. It seems that candour can not but admit the fairness of our author's premises, as well as the legitimate character of his conclusions from them.

"But," says M. P. "if, in consequence of irritation, there should supervene upon this principle of *cold obstruction*, an increased arterial action, the situation of affairs becomes changed; the blood makes redoubled efforts against the obstacles; and being unable to overcome them, flows backwards with a force proportionate to that of its impulsion, towards all the collateral vessels. The lymphatic arterioles, whose calibres in the natural state will not admit red globules, and which I regard as the real secretory organs of the adipose fluids, are obliged to dilate for their reception. It is by this deviation of the globules into the lymphatic and arterial channels, into which a superior force impels them, that the blood is effused into the meshes of the cellular tissue, where these channels terminate. Having once reached this point, and the constricted mouths of the absorbents being unable to remove them, they must be arrested, and of course accumulated. This is the true cause why inflammatory tumours grow so rapidly when the action of the

arteries is very much increased; the cause why sanguineous fluids predominate in such tumours; and the true reason why they become larger than any where else, when occupying situations abounding in adipose tissue."

"But whence this vital effort, (when the irritating cause is energetic, or when not being in itself energetic, yet acts on exceedingly sensible parts), which determines upon the parts the impetuous affluxion of blood above described?"

M. Pujol says, we must here refer to that internal vivifying principle, which, apparently a unit in essence, is nevertheless present in every part of the body, in varying proportions, according to the dose of vitality with which each part is provided by nature; which, is the *mobile* of all the functions, and the real agent of all vital operations in health and disease.

After alluding to the general consent of parts, by which one portion of the system feels and sympathises with another portion, he proceeds to show that the vital principle is the grand moderator of this correspondence, under a few simple laws, dictated by the creator; but which, though few, yet acting in various kinds of organisation, produce the most diversified results.

M. P. knows only two general laws, or rather two intermediate agents, employed by the motorial principle to operate the astonishing phenomenon of life, and direct the animal movements, both in health and disease. These agents are the nerves and the blood vessels.

The author in the next place alludes to the real and powerful sympathy that exists between arterial vessels, that are suffering the impression of local irritants, and those which, though not *immediately* irritated by the morbific stimulus, are nevertheless placed in the vicinity of the irritated ones. The former, he avers, remain constricted, (*crispés*) and refuse a free passage to the blood; but the others, by redoubling their efforts, seem to desire to overcome the resistance they meet with.

We remark here that as the pulse is occasioned by the passage of a wave of blood through an artery, the size or volume of the pulse will be proportional to the quantity that passes through the vessel at every systole of the heart. Now, if an inflammation exist on one of the fingers, and that inflammation be marked by a distended state of the capillary arterioles, we shall, in its commencement, observe no increased size or volume of the arterial pulse at the wrist; but, in proportion as the inflammation becomes more and more intense, we shall perceive an

increase of the volume of that pulse, and be able sometimes so to trace it far up the arm. But let us ask, if inflammation depends on, or is co-existent with, an enlarged or dilated state of the capillary vessels, the small arterioles, what inference ought we to draw from an enlarged or dilated state of the larger tubes, of which the small ones are only continuations, or prolongations? If you admit the small arterioles to be dilated and weakened, then the same is true of enlarged arteries, but if dilated capillary arterioles are taken as proof of increased action, then the same is true of arteries in a similar predicament.

We leave these remarks for the present with the reader, and shall recur to them by and by.

"The suscitation," says M. P., "of arterial movements in the vicinity of an irritated part is not commonly a sudden, nor even a rapid operation. Its beginnings are insensible, and when the play of the arteries is sufficiently augmented to render it perceivable, it is still observed to grow by successive, and more or less gentle augmentations, until it reaches a degree of morbid activity proportioned to the causes which may have excited it."

The above quotations serve to set in a clear light the author's views of the real nature of irritation—views that are wholly different from those entertained by the physiological school, who pretend that the effect of irritation is to produce a direct and immediate attraction or *appel* of fluids to the irritated part; and this, by consequence of a direct and *immediate* expansion of the channels in which the blood flows, an expansion independent of extrinsic force, but intrinsic, and, as it were, sui arbitrii: this position is contrary and offensive to every ascertained law of vital motion—a pure assumption—an hypothesis not to be defended—a sophism.

"It should be observed here that the inflammation of an irritated part commences at the same instant with the increase of relative action in the surrounding vessels, however low in degree, for, from that moment the blood is impelled towards the inflamed parts with a force greater than that which causes it to flow towards other parts, because the essence of the inflammation *consists only in the local superiority of this arterial effort.* Hence it results, that there is a point of time in which the several inflammations are unknown to the patients themselves; and that from the *minimum* to the *maximum* state of inflammation in general, there is no fixed degree to which it must rise, or at which it must stop. Every thing here depends on the strength of the local irritation, and the part acted, in relation thereto, by the circumjacent arterial branches."

We do not concur with the opinion of M. PUJOL, as expressed in the extract above. We regard him as having here lost sight of that unity and simplicity which characterizes the operations of nature, and which he so admirably expounds in his history of *irritation*. Let us suppose with M. P. that irritation is demonstrated by a constricted state of vessels subjected to the irritating cause; let that irritation be confined to a single point, as for example, let it be occasioned by the sting of a bee—every body knows that the irritation here is shown by a remarkable paleness of the spot which has been stung—and that this whiteness or paleness (dependent on the constriction and comparative emptiness of the irritated capillary vessels of the part) soon gives place to a high degree of redness and other phenomena of inflammation. Now, in this case the redness does not commence in a distant circumference, but the very vicinity of the puncture grows red, and extends to a certain distance all around it.

Let any reasonable man here answer the question, why should an irritated part be at first pale, then red? Can he avoid agreeing with M. PUJOL, that the paleness is owing to the circumstance that less blood is in the capillaries, and the subsequent redness to an augmented quantity? How can a part be pale if an afflux or an attraction takes place? It is manifestly an error.

Is it not an ascertained fact that no vital contraction can be continued long without an intervening relaxation: does it not happen so with our voluntary muscles, the heart, diaphragm, stomach, intestines, bladder, &ç.? Does not every *inordinate* exertion of vital power, whether muscular or other, occasion a subsequently weakened state of the organs that may have exhibited it? If the heart have been excited by rage, or any stimulus moral or physical, is not a weakened state of that organ an invariable consequence?—so of our muscles, &c. Now, let us but apply this truth to the matter in question.

The stimulus of the sting (call it, if you please, VAN HELMONT's thorn) occasions a violent constriction of the capillaries within reach of its poisonous irritation. They, like all other tissues capable of contraction, become constricted; they exclude their blood more or less completely, and maintain that state until their power, which had been so much energized, commences its reduction or return to a natural state—for there is a point in which they are brought back to a natural state, but they librate beyond that state, their

violent action has exhausted their vital power, and they are left weakened by exertion; they are disenergized and yield to the impulse of the collateral vessels, which, at given distances from the focus of irritation, had not felt the stimulating, irritating poison of the bee. The surrounding vessels (not inflamed) maintain their relative, resisting, antagonizing power; but the irritated vessels, (weakened by over stimulation, disenergized) unable to resist or antagonize the force with which the heart and circumjacent channels tend to dilate them, give way to the impulse, are injected, over distended, filled with blood. They are therefore weaker than in the natural state, and weaker than the surrounding capillary blood vessels. M. Pujol has departed from the principles with which he set out by averring that the surrounding vessels have acquired a power of making redoubled efforts: they have acquired no such power. Their efforts tend only to exclude the blood from their own channels, and were it not for the column pressing on their contents a tergo, their blood would flow towards the heart, or qua data portæ. If the vessels collateral to a set of inflamed vessels could be supposed to be provided with valves like those of the veins and absorbents, then we could conceive of their acting, as M. Pujol has stated, but the numerous anastomoses, which are known to exist in the capillary system, permit the blood to flow off too readily from newly inflamed channels, to admit the idea of their directing all the force of their parietal contractions against the irritated tubes.

It seems to us very extraordinary that the advocates of the opposite doctrine should see in their therapeutical opinions any circumstances confirmatory of their sentiments.

If a membrane (as the pleura or peritoneum) become inflamed, the practitioner puts in operation certain methods of cure or relief, of which the chief is venesection. Now upon what principle is this remedy employed? To moderate the force of the heart's action! But wherefore moderate the force of the heart's action in a case of congestion or infarction of blood, which is actually occasioned by, demanded by, and maintained by a vital turgescence, an increased action, an active expansion of the vessels in which the blood is so accumulated? What has the heart to do with the matter? You tell us that when a part suffers irritation, it feels the want of more fluid, and invites its afflux from all parts of the system; it demands it, and must have it. I see not how the abstraction of a few ounces of blood from a vein in the arm should alter the demand or necessity for an afflux of blood to the irritated centre. You do

not bleed in pleurisy at this time of day with the antiquated notion of derivation, surely! You do not bleed or leech the feet for inflammation of the arachnoid! No; your view in this operation, like ours, is to lessen the force with which the heart drives the blood into the irritated tissues; the fever, symptomatic of an inflamed pleura, scarcely exciting your fears, irrespective of its influence on the inflamed tissue.

Now, to follow out your doctrine of increased local action of vessels, the best practice in local inflammations is to employ leeches and cups and scarifications; but which of you would rely on these means to the exclusion of the lancet, which, in all cases of an excited circulation, you hasten to employ for the purpose of preparing the way for the successful operation of your local bleedings, and often, to obviate all necessity for their use. You do not lay aside the lancet in croup, and resort exclusively to the leech. Nay, in external superficial inflammations, do you place your leeches directly upon the inflamed vessels, and has not experience taught you to apply them on the most distant circumference of the inflammatory engorgement? You do not trust solely to leeches in ophthalmia!

We conceive then that the principles of practice are on our side in this controversy. We bleed in pleurisy to take off some portion of the force with which the heart and arteries impel the vital fluid into the weakened capillaries, and this, under the persuasion that the loss of blood will have no other effect on the diseased and weakened part, than indirectly to bring its resisting force back to a state approaching the equilibrium. There are cases of ophthalmia, almost unaccompanied by fever; we may leech and cup and blister, and employ lotions, &c. until the patience of the sufferer, and our own are exhausted; but three or four bleedings at the arm, *which can not be supposed to direct their therapeutic power solely to a small patch of inflamed capillaries on the conjunctiva*, cure the patient at once; and this by taking off the pressure, the disproportioned force with which the blood was driven by the great agents of circulation, into those weakened, unresisting tubes; and enabling them, by a gradual return of their relative contractile power, to exclude the superabundant blood from their engorged and over distended channels.

We shall release the attention of the reader, after a few remarks on the part played in inflammation, by the exhalant and absorbent vessels of the part.

It will be admitted that every point of the living system is subject

to the action of absorbent vessels, for it may be removed by them; it is equally plain that every particle of matter has been deposited in its place by an act of nutrition. It is a matter of indifference here whether there be, or be not an exhalant orifice, through which the substances destined to repair the waste of our organs must pass to be deposited, or whether a distinct absorbent tube opens its orifice for every particle of matter; these questions, like those about the extent of space, the duration of eternity, the divisibility of matter, &c. are food for metaphysicians and not for us.

Nevertheless we do know that a system of exhalants, conveying no red globule, and another system of absorbents, are very generally diffused among the tissues, and that like the capillaries they are du domaine de la sensibilité et de l'irritabilité, as M. Broussais expresses it. Are the exhalants capable of passing the red globules through their channels, so as to throw them out upon the surfaces on which they open? That they can do so we often witness in the sanguinolent sputa of pneumonia, in dysentery, &c.

It is clear that in inflammation there is a stasis of fluids, and not simply an augmented flow of fluids through the diseased part; but if a complete stasis takes place in the capillaries, the part becomes cold, livid, insensible, and the condition, denominated gangrene and mortification, exists. Stasis of *blood* in the *capillaries* can not be averred therefore of the inflammations that terminate in resolution, but the exhalants may throw out upon the cellular surfaces a certain quantity of fluids, whether serum or coagulating lymph, which the absorbents can not or will not take up while they are themselves irritated or constricted by the same cause which affected the capillaries: blood even is poured out from the exhalants in some states of inflammation; and hence, after the heat, pain, and redness of a recently inflamed part have totally disappeared, we find a remaining hardness and tumefaction, which does not disappear until the absorbent vessels of the part, either by a spontaneous return to their natural state of power, or stimulated by our liniments and frictions, are enabled to remove every vestige of the disorder which had recently modified all the component tissues of the inflamed portion.

Such are the views of M. Pujol. We regard his theory as eminently rich in pathological truths and therapeutical indications; and with the exceptions pointed out in this article, we most cordially concur in his estimate of the pathological occurrences that take place in inflammation.

Bibliographical Notices.

ARTICLE XV.—*Précis Historique de l'épidémie qui règne a Marseille, et vues nouvelles sur la Vaccine, considérée comme une simple petite vérole locale, et sous ce rapport n'exemptant pas toujours les vaccinés, dans les grandes épidémies de variole, des atteintes de la varioloïde, qui n'est elle-même qu'une petite vérole mitigée, mais qui, dans quelques circonstances particulières, peut néanmoins devenir confluente et maligne par ses complications; suivies d'un apercu sur les moyens de prevenir dorénavant l'irruption de cette dernière maladie. Lettre à M. le docteur* DESGRANGES, *Doyen des Médecins de Lyon, membre de plusieurs sociétés savantes, nationales et étrangères. Par* L. J. M. ROBERT, *Professeur d'hygiène navale a l'école de médecine de Marseille, &c. &c. Marseilles, Aug.* 1828, 8*vo. Pp.* 128.

A Historical Sketch of the Epidemic prevailing at Marseilles, together with new views of the vaccine disease, considered simply as a local small pox, and for that reason not always exempting the vaccinated from being attacked, during extensive epidemics of small pox, by the varioloid, which is itself merely a modified variola, but which, under particular circumstances, may nevertheless by its complications become confluent and malignant: followed by a notice of the means of preventing in future the occurrence of the latter disease; in a letter to Doctor DESGRANGES, *dean of the medical faculty at Lyons, member of several learned societies, national and foreign. By* L. J. M. ROBERT, *&c.*

The title of this publication expresses very fully the nature of its contents; and though we may feel inclined to dispute the correctness of some of the hypotheses advanced in it, yet an examination of these would be misplaced in a notice like the present. The work has been taken up principally with the intention of showing by it, that, while the small pox prevailed as an epidemic during four months of the past year at Marseilles and in its neighbourhood, the leading facts observed in regard to the degree of protection from the fatal effects of the disease enjoyed by those who had been subjected to vaccination, are precisely the same as those observed during the visitations of the small pox in various other parts of the world, and tend strongly to confirm our confidence in the discovery of JENNER.

The epidemic at Marseilles appears to have been one of peculiar virulence, attacking, in many instances, the vaccinated and variolated as well as the unprotected. From the first of May to the fourteenth of August, it destroyed 1230

unprotected individuals.* It is impossible to say how many deaths occurred, during the same period, in those who had been vaccinated or inoculated, but when it is stated that of the vaccinated, the great mass, "like another column of granite continued to present an invulnerable front to the epidemic," (page 40,) we must conclude that the whole number affected with the modified disease, and, of course, the amount of deaths in the protected were extremely few; indeed the author states in general terms, that "the number of the vaccinated attacked by the varioloid never amounted to one per cent., and that in these, the disease was very mild, excepting in a few cases in which *certain complications* rendered it severe or even fatal."—Page 54.

Some general conclusions in relation to this subject may be drawn from the records of the Hôtel-Dieu at Marseilles. During the first month of the epidemic there were admitted into this Hospital 259 cases of genuine small pox, 30 of which were in individuals said to have been vaccinated; of these 27, including two of the vaccinated, terminated fatally. There were also admitted 50 cases of varioloid occurring subsequent to vaccination, all of which recovered. Dr ROBERT states that the disease, as it occurred after vaccination at Marseilles, "was in general so mild that the majority of the patients were not seen by any physician." M. DUGAS, physician to the Hôtel-Dieu, we are informed, did not lose a single patient with the varioloid, either in the hospital or in his private practice.

Dr R. refers to twenty-six cases of death from secondary small pox; in some of these the patients were deeply marked by the first attack. We should infer from several observations contained in this work, that secondary small pox was proportionably far more fatal than the varioloid.

The author accounts for the fact of some of the vaccinated becoming readily affected with the varioloid, and the greater violence of the modified disease in certain cases, by supposing that the constitutions of these individuals had not been placed fully under the influence of the vaccine infection, from the following causes.

1. The imperfect manner in which vaccination had been performed; or its being performed by persons ignorant of the progress and specific characters of the disease.

2. Interference with the regular progress and maturation of the vesicles; particularly by their being accidentally ruptured, or intentionally opened.

3. The number of the vesicles produced upon the arm in vaccinating being too few to render the protection of the system complete.

4. "With respect to those patients," says Dr B. "in whom the varioloid was peculiarly severe or fatal, I do not think I shall go too far in attributing this circumstance, independent of a defective or incomplete vaccination, to the intensity of the reigning variolous epidemic, to the length of time which had elapsed since their vaccination, and above all to idiosyncrasies of constitution, under the influence of a particular atmospherical constitution."—Page 45.

---

* In 1808 the population of Marseilles was computed at 90,000, and does not probably vary much from that at present. In 1825, during the prevalence of the small pox in London, with a population of 1250,000, 1252 died; and in Philadelphia, with a population of about 150,000, during the small pox epidemic of 1827, 100 died!

The supposition that the protective influence of the vaccine, as well as of the variolous infection, is lost, or at least greatly weakened, by the lapse of time, is much insisted upon in this work; quoting the statement of Dr ALMON, contained in a letter to Dr WARREN of Boston, that "the varioloid was always observed by him to be more severe in individuals who had been long vaccinated;" the author adds, "the same observation was daily verified in the epidemic of Marseilles, to which many fell victims, who had been a number of years vaccinated, as well as adults marked by the natural small pox."

A close attention to this subject, during two extensive visitations of small pox, has led us to a contrary conclusion, so far as it regards the vaccine infection—very many facts have fallen under our notice, proving incontestably that those who have been vaccinated enjoy an equal degree of protection from the fatal effects of small pox, whether one week or twenty years have elapsed since the period at which the operation was performed.

Near the close of the work is the following important sentence: "This epidemic has undoubtedly exceeded in intensity every other heretofore described, and by it many of the vaccinated have been severely affected; nevertheless the majority of the latter have passed through it untouched, and every fact connected with it tends to prove that if vaccination were to become universally practised, France would be for ever delivered from the variolous contagion, as she now is rendered safe from other exotic contagions by her sanitary regulations."

Φ. x.

ARTICLE XVI.—*Jahrbücher der Ambulatorischen Klinik zu Halle. Herausgegeben von* PETER KRUKENBERG, *Der Heilkunde und Wundarzneikunde Doctor, Professor der Medicin an der Vereinigten Unversitaet Halle—Wittenberg. Vols. I.—II. Pp.* 394—404. 8*vo. Halle.*

Annals of the Ambulatory Clinic at Halle. Edited by PETER KRUKENBERG, *Doctor of Medicine and Surgery, Medical Professor in the United Universities of Halle and Wittenberg.*

The Ambulatory Clinic was established at Halle in the beginning of the year 1816, and is supported by an annual appropriation from certain public funds of 750 rix dollars. The objects of the institution, which resembles in some of its features our dispensaries, are to afford gratuitously medical attendance to the poor, to present to a certain number of young physicians an opportunity for clinical instruction, and generally, to aid in extending the limits of our science.

The patients who wish to take advantage of the institution either attend daily at the office, or if confined to their beds, or circumstances render their going out improper, they are visited at their own dwellings. For the latter purpose the city is divided into six districts; each one of which is placed under the superintendence of a physician who has attended the clinic, in the capacity of junior, for at least one or two years; with him are associated from three to six of the juniors, who take charge of the more simple cases, in the management of which they are assisted by the advice of the former: difficult cases are referred to the

assistant physician, or to the most experienced of those attached to the institution—the lecturer visiting them whenever it is requested by the attending physician or by the patients.

Every one who applies to the Clinic receives attendance—the poor gratuitously; "but many of the patients purchase their medicines, being satisfied with free attendance—others, not only procure their own medicines, but recompense, also, the physician for his advice." The money received from this source is applied to the support of the extremely indigent, and to meet various trifling expenses of the institution. Clinical lectures are delivered every day between the hours of 11 A.M. and 2 P.M. by Dr KRUKENBERG.

It is impossible for us here to detail all the peculiarities of this institution. In general they appear to us of such a nature as cannot fail of rendering it a valuable school for clinical instruction. We fear that many years will elapse before any thing of a similar kind can be attempted in this country with any hopes of ultimate success.

The annals of the Clinic at Halle have been undertaken by Dr K. principally with the view, to use the editor's own words, "of presenting periodically to the medical public an account of the manner in which he has fulfilled his duties as clinical lecturer to the institution, and, at the same time, as far as his abilities and the opportunities he possesses will admit of, to contribute to the advancement of a science to which he is ardently attached, and to which his entire life has been devoted."

The two volumes which have reached us have led us to form a very favourable opinion of the talents of Dr K., and we trust that his efforts towards the diffusion of medical knowledge may be crowned with success. Of these volumes, we regret that our limits will not permit us to take any other notice than merely to enumerate their respective contents.

The first, besides a history of the establishment and progress of the institution, meteorological observations for the years 1816, 17, 18, and a mineralogical description of the environs of Halle from the pen of V. VELTHEIM, intendant of the mines, comprises also an account of the more important epidemic diseases which occurred at Halle from the commencement of the Clinic to the year 1819, together with the modes of treatment by which they were most successfully combated, illustrated by a number of select cases. The diseases described are inflammatory bilious fever, contagious typhus, catarrhal fever, rheumatic fever, pertussis, measles and scarlatina. The descriptions are drawn up in a plain but masterly manner, and the plans of treatment laid down, are, in their general outlines, highly judicious: they indicate a mind habituated to an attentive study of diseased action, as it presents itself in the various organs of the body—willing to test the correctness of its diagnoses by the information to be derived from pathological anatomy, and one perfectly conversant with the modern improvements in pathology and therapeutics.

The second volume contains meteorological observations for the years 1819, 20, 21, 22, a clinical examination of the air and water of the wells of Halle by Dr MEISSNER, accounts of the acute hydrocephalus, of inflammations of the ear, and of chronic gastritis: together with several interesting cases of medullary tumours of the brain, softening of the stomach and intestines, various affections of the liver, intussusception, internal strangulation of the intestines, &c. &c.

We recommend the Annals as a work replete with interesting and useful matter, and as deserving a place in every medical library. Φ. Κ.

ARTICLE XVII.—*An Oration delivered before the Philadelphia Medical Society, February* 18, 1829. *By* CHARLES D. MEIGS, M.D. *Honorary Member of the Society; Member of the American Philosophical Society.* 8vo. *Pp.* 28.

In the performance of the duty imposed upon him by the constitution of the society, the orator on the present occasion has selected for his subject, medical education.

To the individual about to commence a course of medical studies, a more important or interesting subject cannot be presented for his consideration, than the best means of acquiring a knowledge of the profession to which he has devoted himself, and which is to become the entire pursuit of his future life. From the want of a correct examination of this question, how many are there, who have to regret much valuable time wasted in studies, if they deserve the title, that have had no tendency, or a very remote one, to supply them with that knowledge so essential at the bed side of the sick!

Were nothing more required now to constitute a physician than was formerly; were it only necessary for him to be acquainted with the leading rules of practice, as laid down in the writings of GALEN, CELSUS, BOERHAAVE, CULLEN, BROWN, or some other fashionable authority; to be familiar with the names and definitions of diseases; to have the memory loaded with prescriptions, sanctified by long use, and transmitted from one teacher to another, or servilely copied from books; and, finally, to be able to shield himself from all difficulties in the mystic language of the doctrines of the day, nothing would be more short and easy than the road to the temple of medical science. But, at the present day, to obtain admission, it is required that the candidate be possessed of qualifications much more extensive, and much less easy of acquisition.

It is true, when we consider the immense number of medical writings which have been presented to the world, professing to comprise the accumulated light and experience of all preceding ages, and to open to our view an almost boundless fund of knowledge, nothing would appear more easy than from them to make ourselves masters of every thing necessary, in order to know, distinguish, and heal, all the numerous ills that flesh is heir to. But, however valuable to the physician may be that vast collection of facts, observations and opinions, of which our medical writings are composed, yet the individual, who shall attempt, by an indiscriminate study of these, however prolonged or attentive, to arrive at the knowledge of our profession, will find himself lost in a wilderness, without either compass or guide to direct his steps to truth and certainty on the one hand, or to guard him from error and delusion on the other.

Hence is it all important, not merely that the student should bring to the task every talent and acquirement necessary for its accomplishment, but also that the plan should be pointed out to him, by following which, his labours will most certainly be crowned with success. To lay down such a plan is the chief object of the oration before us; and so far as the limits, to which on such occasions the speaker is necessarily restricted, would permit him, Dr MEIGS has succeeded in sketching the outlines of a course of medical studies, the excellence of which, no one will, we are persuaded, be inclined to dispute.

Previously to his entering upon this course, the orator has insisted that the

individual so intending, shall be properly prepared by the possession of that knowledge which is usually expressed by the terms classical, or liberal education. In so doing he is supported by the opinions of a majority of the most distinguished members of the profession both at home and abroad; and we sincerely regret that upon a subject of so much importance the requisitions of our medical schools are almost entirely silent.

Want of learning in the labouring classes of society excites in us no sentiments of contempt. To their occupations learning is not essential; and the restricted circumstances under which they are most generally educated, with the necessity, in after life, of constant application to manual labour, allow them no opportunity for its acquisition. But an illiterate physician can never fail to be contemptible; for learning being intimately connected with the profession of which he is a member, we expect to find in him the accomplished scholar, and are disappointed when it is otherwise.

To no one with propriety can the term scholar be applied who is unacquainted with the Greek and Latin, consequently a knowledge of these is considered a prerequisite in the aspirant after medical honours. Neither should he neglect the study of the modern languages: if ignorant of the French, German, and Italian, the physician will find himself excluded from a vast and highly important mass of knowledge, the want of a familiarity with which he will severely experience at the bed side of his patient, as well as in his intercourse with the more intelligent and better educated members of the profession. It cannot for a moment be supposed, that by these acquirements a barrier will be erected which cannot be readily overcome by every individual possessed of ordinary talents, desirous of entering the profession, and at an age sufficiently early to allow of full time for acquiring the necessary amount of medical knowledge. Let the scholar be at first initiated fully into the Latin, and he has in his hands the key by which almost every other European language can be acquired with much facility, and in a period far shorter than is generally imagined.

It is hardly necessary to say any thing of the necessity to the physician of an acquaintance with, and a facility in writing his own language. Every medical man should indeed be a writer; so far at least as to be capable, when an occasion requires it, of communicating his sentiments in language perspicuous and correct.

But to be a mere linguist, or fine writer, is not exactly the liberal education we should require of the individual destined to the study of the medical profession. However necessary we consider a knowledge of languages to be to the physician, yet there are other branches of knowledge of the first importance to him, the foundation of which, at least, must be laid previously to his entering upon those studies of a more strictly professional character.

The human body is so materially influenced by every thing that surrounds it, and by every varying circumstance under which it is placed, whether of a physical or moral nature; so numerous indeed and diversified are the causes necessary to support our organs in a healthy discharge of their functions, or which tend to induce in them a state of disease, that the physician, not merely to make good his claim upon the respect of the learned, but also that he may justly merit the confidence of the sufferer and the gratitude of the public, is bound to store his mind with as extensive a collection of facts, whether relating

to man himself, or to the phenomena of the natural world, of whose surface he is an inhabitant, as his time and the facilities afforded him will permit.

Without referring to those sciences, such as chemistry and botany, which are very generally confessed to be indispensable requisites in a medical education, there still remain other auxiliary branches of knowledge much neglected, it is true, by medical students in general, but yet not less important to constitute the judicious and successful practitioner. It has been very properly said, that there is scarce a circle of human knowledge upon the boundaries of which the scientific physician does not necessarily infringe in some point or other of his extensive orbit.

It is from an acquaintance with the difference and changes of the seasons at any given situation; with the currents of air prevalent at particular periods of the year, as well as the nature of the districts over which they pass; it is from an acquaintance with the qualities of the soil and water in the several parts of the globe; the nature of a country's surface, whether spread out in wide extended plains, undulated by a succession of hill and valley, or intersected by mountainous chains; whether parched by drought or liberally supplied with moisture; whether abandoned to the spontaneous productions of nature, or cultivated by the hand of man; it is from a knowledge of the food, occupations and pursuits, both public and private, of the inhabitants; their clothing; the mode of construction and location of their dwellings; nay even from an acquaintance with their governments, and their religious rites and opinions, that the physician is to derive no inconsiderable light in relation to the causes and pathology of diseases and their modes of prevention. It is important, therefore, for every one who proposes to enter upon the solemn and highly responsible duties of a medical practitioner, that he diligently pursue the study of the natural sciences in the most extensive signification of the term, of history, geography, and all those co-relative branches of human knowledge, capable of placing at his command the important facts, the leading heads of which we have thus superficially traced.

"The physician should, indeed," to use the words of an excellent writer, "from his earliest years, be educated with the view to his future profession. If the best portion of his youth have been directed to other pursuits, he will seldom have time to acquire that extent of information and readiness of application which the practice of his art so eminently demands."

We have been led into the above remarks by the very excellent oration of Dr Meigs, the perusal of which we recommend to our professional brethren as well as to the medical student. φ. x.

ARTICLE XVIII.—*A Practical Synopsis of Cutaneous Diseases, from the most celebrated Authors, and particularly from Documents afforded by the Clinical Lectures of Dr* BIETT, *Physician to the Hospital of St Louis. By* A. CAZENAVE, M.D. *and* H. E. SHEDEL, M.D. *&c. Translated from the French, with Notes.* Philadelphia, Carey, Lea & Carey, 1829.

To say that the Hospital of St Louis is the best clinical school for cutaneous diseases, and that Dr BIETT is deservedly celebrated as a teacher and practitioner in this institution, will, we apprehend, be a sufficient passport for the introduction of the above work to the favourable opinion of our readers. It is methodically arranged and clearly written. There is no idle declamation or far fetched comparisons to astonish and bewilder us; but in place of these we have presented in due succession a brief pathological history of the symptoms, causes, diagnosis, prognosis and treatment of every disease affecting the cutaneous system.

In a sensible introduction, the editors have favoured us with a critical history of the classifications of the diseases of the skin; and have introduced, for their own guidance and adoption, in the work, that of WILLAN, with the modifications by M. BIETT. We cannot perhaps do better than copy the following tabular view in which is exhibited the "Order in which the diseases of the skin are classed and described."

Order I.—EXANTHEMATA.
Erythema.
Erysipelas.
Roseola.
Rubeola.
Scarlatina.
Urticaria.

Order II.—VESICULÆ.
Miliaria.
Varicella.
Eczema.
Herpes.
Scabies.

Order III.—BULLÆ.
Pemphigus.
Rupia.

Order IV.—PUSTULÆ.
Variola.
Vaccinia.
Ecthyma.
Impetigo.
Acne.
Mentagra.
Porrigo.

Order V.—PAPULÆ.
Lichen.
Prurigo.

Order VI.—SQUAMÆ.
Lepra.
Psoriasis.
Pytiriasis.
Ichthyosis.

Order VII.—TUBERCULA.
Elephantiasis Græcorum.
Molluscum.
Frambæsia.

Order VIII.—MACULÆ.
Discolorations.
Bronze colour.
Ephelis.
Nævus.
Decolorations.
Albinism.
Vitiligo.

Diseases which cannot from their nature be arranged with the above.

Order IX.—Lupus.
Order X.—Pellagra.
Order XI.—Syphilitica.
Order XII.—Purpura.
Order XIII.—Elephantiasis of the Arabs.
Order XIV.—Diseases of the Sebaceous Follicles.
Order XV.—Keloide.

Distinct and characteristic peculiarities of each of these orders are next given, which we wish very much that we had space to transcribe. It is not merely for obtaining a knowledge of the more chronic forms of cutaneous disease that a reference to this work is valuable. The directions for the treatment of the acute varieties such as erysipelas, measles and scarlatina are clear and pertinent, and contrast very satisfactorily with the confused and empirical curative methods found in what are generally considered standard works.

We do not well see how any practitioner at all desirous of the correct diagnosis and successful treatment of cutaneous diseases can decline becoming the possessor of the volume now under consideration. The title on the back is, we find, *Cazenave on Cutaneous Diseases.* The translator's language is good; and the notes which he has added are strictly "germain to the matter." If the punctuation be exceptionable, in not sufficiently subdividing sentences, we must blame the original writers, for this is a national sin in French medical composition.

Article XIX.—*A Treatise on the Scrofulous Disease. By* C. G. Hufeland, *Physician to the King of Prussia, &c. Translated from the French of* J. B. Bousquet, *of the Medical Societies of Paris, Thoulouse, &c. &c. By* Charles D. Meigs, M.D. *Member of the American Philosophical Society.* Carey, Lea & Carey, John Grigg, &c. Philadelphia, 1829.

Scrofula, though a name of such ominous import to all classes of the community (except to the empiric who flourishes on others' fears and credulity) has not engaged that systematised inquiry from physicians to which it is so peculiarly entitled by its insidious approaches, its deep and extensive roots in the animal economy, and its unseemly and dangerous consequences. Scrofula is not to be waited for until ulcerations and tumours of the superficial lymphatic glands have declared themselves. It ought to be checked ere it has made such fearful advances, and not allowed to become the subject of conjectural medication and professional reproach.

An English translation of the work of Professor Hufeland has been much wanted amongst us, and we hail its appearance with pleasure, convinced as we are that they who study it with any degree of attention, cannot but have clearer

views of a proteiform disease, and increased ability and confidence in the employment of curative means for its removal. They will not after having perused its pages, find their scrofulous patients weary of their doctors and prone to indulge in all manner of empiricism: nor will they unwillingly deceive by promising or performing partial cures, to be followed by aggravated disease and suffering. We cannot perhaps give a better specimen of the author's pathological acumen, nor a more salutary lesson to all concerned, than by inserting here the following paragraph.

"We break up the habits of nature when we suddenly disperse, by means of topical applications, long standing local affections; and it is not rare for her to concentrate herself on the interior of the body, and produce engorgements, suppurations, in a word, new productions, as if to indemnify herself for those which we have removed from her grasp. This is a thing I have often seen after the sudden retrocession of a cutaneous eruption, an ophthalmia, and even after surgical operations. Thus, the amputation of the mammary gland is followed by scirrhus of the lungs; that of the testicle by a production of the same nature in the lower belly, &c. I trust these facts will convince surgeons of the necessity there is of first destroying the scrofulous diathesis before they remove its local symptoms by the bistoury, and of establishing issues after the operation, as if to indemnify nature."—Page 96.

To the practitioners of the south and west, this treatise will be of inestimable value in aiding them to arrest the fatal march of scrofula among the coloured population of that section of our country. Self interest and humanity will here go hand in hand, and be in their turn aided by the laudable ambition to triumph over disease. We deem it unnecessary in this place to exhibit the work in more minute detail—as this task has been already accomplished in the review of it published in the fifth volume of this Journal. The present translation is in style and phraseology perspicuous and easy, being equally clear from ornateness on one side and triviality on the other.

Quarterly Summary

OF

Medical and Surgical Intelligence.

We have reason to believe that misapprehension extensively exists with regard to the nature and mode of preparation of our Quarterly Summary. We wish therefore, to have the manner in which it is brought together distinctly understood.

Much matter of an analogous kind has, at various times and in different periodicals, been simply *republished;* being composed of tracts from foreign works of the same class, which were marked and sent to the printer to be copied. To this easier and cheaper mode there lay, in the opinions of the founders of the present journal, very serious objections. The abstracts thus used, being made for a foreign market, were not such as would have been best adapted to American perusal. They were drawn up in such a manner as was supposed best suited to the readers for whom they were designed, and not to ours. They were always abridged and partial, subject to the prejudice of the compilers, and frequently liable to be misunderstood, from their allusions to occurrences of a local character, and not known in this country. Add to this circumstance, that as all these extracts must of necessity be in the *English language*, those which related to observations and discoveries made on the continent of Europe, only reached us drained through the medium of the journalists of a particular nation.

Instead, therefore, of this "labour of the shears," the following method was adopted, and has been, in an unvarying manner, acted upon to the present moment. The foreign journals are distributed among a number of individuals, believed to be well prepared in the several departments in which the subjects are classed; and the writers are instructed to prepare written abstracts, so as to present the greatest possible amount of useful and correct information within a given space. From the multiplicity of sources, and an anxiety to furnish as late information as can be given without a sacrifice of usefulness, the papers are prepared with considerable haste; but extreme care has been taken, not only to condense as much as possible, but to preserve the author's true meaning. In doing this, it is frequently found expedient to employ a share of his own words; as otherwise we are liable to the charge of misrepresentation. Yet at the same time, it is necessary to brevity, that the whole should be subjected afresh to the labour of composition; and wherever it has been judged expedient to make an entire extract, we believe, with an accidental exception or two, it has been marked with inverted commas. Elaborate and complete digests are thus periodically made of many articles of considerable length. The French, Italian, and German Journals are inspected by individuals possessing a competent acquaintance with the corresponding languages; and the abstracts are made directly from them. The reader, in addition to other advantages, is thus spared a great

and fertile source of error in the distaste and dislike occasionally evinced between different nations, even in the profession of medicine.

It has been the object of this periodical compilation, to supply our subscribers with an abstract of the current medicine, more complete than they could get from any other source, and without laying them under the necessity of subscribing to numerous publications, or reading through the embarrassment of foreign languages. With what success these efforts have been crowned, it is for our readers to say. We are highly flattered with finding that our example, in this respect, has been copied by several works of the highest standing both in Europe and America, and in particular by that great and imposing production, the Journal des Progres des Sciences et Institutions Medicales. Our readers may at any rate be assured, that however humble the character of the Quarterly Summary, and whatever may be its success, it is that department of the work upon which most labour has been bestowed.—[Ed.]

I. ANATOMY.

1. *Preservation of Subjects for Dissection.*—In a letter from Sir G. S. M'Kenzie, Bart. to Dr Christison, which is published in the Edinburgh Medical and Surgical Journal of July 1828, that gentleman states that he had been desirous of obtaining an agent which had a strong attraction for moisture, but no corrosive qualities. On trying the effect of molasses on muscle, he found that a mass of flesh immersed in it was in a few days deprived of all its juices, and that the fibres became rigid. It was reduced to a state resembling pemmican. He says that after he had made many trials, a friend of his immersed a hand and part of an arm which he had amputated, in thick molasses; and after a few weeks it was converted into most perfect mummy, surpassing any Egyptian specimen he had ever seen.

He has specimens which he regards as "proofs that bodies after being immersed in molasses for a sufficient length of time, washed and exposed to gentle heat, and then wrapped in oil cloth or oiled silk, may remain unchanged for any length of time." The power of molasses is such, he feels assured, that disembowelling is not necessary—that injection by the œsophagus and bowels and trachea, together with the introduction of a portion into the abdominal and thoracic cavities, would probably preserve every part. The molasses should be thick and as free from water as possible.

For preserving subjects that are to be carried to a great distance, or for keeping them in the dissecting room when not wanted for immediate use, he gives the following directions.

"The subject being placed in a cask, let it be filled with a liquor, made of one measure of molasses, one of salt, and fifteen or sixteen of water. The head of the cask may be put on, having two small holes in it, and after twenty-four hours, the liquor may be poured in by one of the holes, while any air in the cask escapes by the other, and then both may be plugged up, and the cask forwarded to its destination.

"I have little doubt, if the cask be perfectly tight, of subjects coming in a good state from the West Indies or the coast of Africa."

In a note to Sir G. S. M'Kenzie's letter, Dr Christison says he has seen the hand, above alluded to, in Dr Combe's possession; and although it had been prepared ten months, and no particular pains taken to exclude the causes which promote putrefaction, it is not in the slightest degree decayed.

2. *Preservation of Anatomical Preparations.*—Mr Gascoin gives the following directions for preserving specimens of morbid anatomy. "Having removed the diseased part from the body, it should be as little handled or dissected as possible, especially when the effects of inflammation, congestion, &c. are to be preserved, as the blood may be pressed from, or distributed in the minute

vessels. Let the blood which may have escaped from cut vessels be gently washed off from the surface with a solution of the *muriate of ammonia*, or be absorbed by a soft sponge, lightly applied. The part should then be wrapped with care in old linen, and be so immersed in *one part of a saturated solution of muriate of ammonia and two of rectified spirits of wine*. After two or three days the linen may be removed and the part restored to the fluid.

"Should the preparation be large, or from the nature of the disease contain a large quantity of aqueous fluid, then an additional portion of the muriate of ammonia in powder should be added to meet the excess of aqueous menstruum. The time necessary for maceration will mainly depend upon the size of the part to be preserved; but generally from ten to fifteen days will be found to be sufficient, although nothing can be lost from an extension of that time.

"Being taken from the macerating fluid, it should be again washed in a solution of muriate of ammonia, then dissected as much as requisite, and be 'put up' at once, in equal quantities of a saturated solution of the above salt in distilled water and rectified spirits of wine. I should observe that in these preparations the part is somewhat corrugated, which is not the case if *one-third* of the saline solution be used with two of the spirit; yet in the former quantities I have some reason to think the appearances of disease may be more securely preserved."—*Med. Gaz.—London Med. and Surg. Journal, Jan.* 1829.

3. *Connection between Monstrosity and the Nervous System.*—In the 3d volume of TIEDEMANN's Journal he investigates the above subject, and is decidedly of the opinion that there is a direct relation between the constitution of the nervous system and the construction of the other parts of the body. When a nerve is absent, the corresponding organ is also absent, and the nervous system being imperfect, the part under its influence is imperfectly developed. In all monsters with excess of formation the distributions of the nervous system correspond. He investigates the point whether the irregularities of the nervous system are the cause or effect of those of the organs, and concludes that the nervous system, as the first existing apparatus, regulates the formation and development of the embryo, and determines the peculiar form and disposition of the rest of the organs.—*Edinburgh Med. and Surg. Journal, Jan.* 1829.

II. PHYSIOLOGY.

4. *The Capillary Circulation.*—In the absence of other physiological news we copy verbatim the following very interesting article from the Edinburgh Medical and Surgical Journal for July 1828.

"In the work now quoted (Commentationes Soc. Physico-Medicæ Mosquensis II. ii. 327) which we believe is hardly known in this country, are contained some very curious experiments and speculations on the force which moves the blood in the capillary vessels. As the subject is one of much attraction at present, when so many theories, all said to be founded on the basis of facts, have been in vain conceived with the expectation of accounting for the phenomena, we are sure the reader will not regret the opportunity of becoming acquainted with another hypothesis, which certainly has the merit of novelty to recommend it, and which is also deduced, whether legitimately or not we shall not inquire, from facts of extreme interest, of unquestionable accuracy, and so far as we remember, perfectly new. We are astonished that they have been before the public since 1821, without having been noticed in any scientific journal of Britain, France, or Germany, which we have had an opportunity of consulting.

"We shall commence with an account of his experiments, the merit of which ought to be considered quite apart from the use which the discoverer has made of them; and as the work which contains them is very scarce in this country, we

shall relate the leading experiments nearly word for word. The original, it should be remarked, is in Latin.

"The author, FERDINAND FREDERICK REUSS, in a preliminary essay on what he calls the *hydragogue* or aquapellent property of electricity, has related several experiments to prove the existence of a new property in galvanism, the power, namely, of impelling water from the positive to the negative pole. He appears to have been led accidentally to study the phenomena in question, in consequence of observing the movements in the water, of the particles of oxide of copper formed when the positive pole of his battery was made of that metal.

"After describing the particulars of this motion he proceeds to more satisfactory experiments. This impulse, says he, towards the negative pole, is better seen when the water is contained between two parallel glass plates three or four lines apart from one another, and when the wires are immersed at right angles to the water, being made of gold or platinum, and covered with glass tubes, sealed at their extremities to the wires. It is convenient also to keep the wires steady, yet moveable, by thrusting them through two pieces of cork which rest on the edge of the vessel. If into the apparatus so prepared, common water be poured, and the battery charged, the calcareous matter which is separated by the decomposition of the salts of lime in the water, and causes turbidity, will not only show by its non movements, a continual flow of the water from the positive pole in lines curved downwards, and then bending upwards to the negative pole, but will also delineate the course of the current by particles adhering to the surface of the glass plates.

"But the repulsive power of the positive, and attracting power of the negative pole, is seen much more satisfactorily, if the water in contact with each pole is separated by a stratum of porous matter, so that the particles which are impelled from one towards the other pole, may pass through the interstices, while the cohesion of the interposed body may prevent other particles from passing in the opposite direction by their own gravity: which conditions, in fact, are easily fulfilled by taking a tube of the form of the letter U, filling its curve with sand, and its straight, upright limbs with water. The two wires being now immersed in the water in the two limbs, and the galvanic circle consequently completed, the water will be observed slowly to sink in the positive and rise in the negative end of the tube. With a voltaic pile composed of ninety-two silver roubles and as many plates of copper, a tube seven and a half inches long and wires made of platinum, I found that in fifteen or twenty minutes, the water stood ten lines higher than before in the negative, and as much lower than before in the positive end of the tube. On interrupting the galvanic circle the water soon returned to its original level, and on restoring the continuity of the circle, the transfer soon recommenced. Next day, fourteen hours after the experiment began, the positive limb was empty, the negative end was full to overflowing. After observing that it continued thus for four days, I interrupted the galvanic circle again, and the water soon returned to its equilibrium of level.

"A similar but much more wonderful result was obtained when the interposed substance consisted of clay. I prepared a quadrangular prism of moist potter's clay, ten inches long and two inches in breadth and thickness. At each end of this prism, and five inches apart from one another, I fixed half an inch deep in the clay, two glass tubes three inches long, an inch in diameter, and open at both ends. I then poured into each tube an inch of water, and covered each of them (loosely, however, so as to allow a passage to the air,) with a cork, through which the wires of the battery were passed down to the middle of the water. The pile consisted this time of seventy-four double plates, such as those used in the last experiment. The following phenomena took place. As soon as the electric circle through the wet clay was completed, which was indicated by the escape of air-bubbles from the water, the clay bottom of the positive tube began to swell and raise the sand, with a thin stratum of which I had covered it, to keep the water from becoming muddy. In the course of half an hour the clay appeared softened to mud, a part of which pierced through the same, and projected upwards like a little hill. By and by, the pyramid discharged from its apex

a muddy liquid, which ran down the sides like lava, and soon formed over the sand a layer of mud three lines in thickness. For half an hour no change was observed in the level of the water in either tube, and the sand or clay remained in the negative tube quite undisturbed. But when three hours had elapsed, the level of the water in the negative tube had risen one line; in twelve hours it had risen to two lines and a half; and in the mean time, the whole water of the positive tube had entered the clay and the surface of the mud was about two lines lower than the *original situation* of the water.

"The following night the mud in the positive tube had sunk so far that the wire was not immersed in it; consequently the electric circle was interrupted. Nevertheless I found the level of the water in the negative tube a quarter of a line higher than before, and the clay in the positive tube was firm on its surface. The positive wire being then depressed so as to restore the continuity of the galvanic circle, the clay of that side gradually became firmer and more dry, while the water rose in the negative tube. At length in two days, the latter had attained its highest level, namely, three and a half lines above its original surface, while the clay in the positive tube had become so dry as to crack. In two days more the cracks were larger, but the level of the water in the negative tube was not higher, probably because any further increase it might have received was compensated for by evaporation. That no more than one-third of the water which disappeared from the positive appeared in the negative tube, is to be explained partly by its having evaporated, partly by its having been diffused and retained in passing through the clay between the tubes.

"In addition, therefore, to the properties already known to be possessed by the electric current, such as its power of effecting chemical combination and decomposition, of imparting magnetic properties to bodies, of exciting the muscles to contraction, it is also endowed with the power of impelling fluids in a direction from positively to negatively electrified bodies. This power Mr Reuss calls the *vis electricitatis hydragoga*. He resorts to it freely for explaining some terrestrial phenomena, such, for example, as the flow of springs from rocks, too high for water to reach by pressure from another source. But, in particular, he has applied it to explain the movement of the blood through the capillary vessels of the circulating system of animals. We believe it is unnecessary to spend any arguments here, in showing that all the theories yet devised for that purpose, have completely failed. The action of the heart is completely inadequate to maintain the capillary circulation, as is shown very satisfactorily by our author, Mr Reuss, as well as by former physiologists.

"Mr Reuss's theory of course is, that the arterial system is in a state of positive, and the venous system in a state of negative electricity; and if he could establish this fact by observation and experiment, and not by hypothesis merely, on which its existence at present depends, there could be no difficulty in allowing that he had pointed out by far the most probable cause, and at all events *one* powerful cause of the capillary movements of the blood. As it stands, it appears to us peculiarly interesting as adding, to the facts and arguments formerly advanced by Wilson Philip, Dutrochet, Prevost, Dumas, and others, a new and important fact in support of the analogy, if not identity, of the nervous with the galvanic power."

5. *Torpidity of the Common Tortoise.*—The temperature of these animals while in the torpid state in winter is diminished; their blood circulates slower, their respiration is less frequent, and sometimes entirely suspended; there is also a suspension of the action of their stomachs and digestive organs, with diminished irritability and sensibility of the muscular and nervous powers. Heat and air are the only agencies which rouse them from the lethargy. The article from which we have derived the above, contains notices of several land tortoises that attained to very great age; one of them being known to have lived 220 years; another at the episcopal palace at Folham, procured by Bishop Laud in 1628, died in 1753, aged of course one hundred and twenty-five years.—*Lond. Med. and Surg. Journ.*

III. PATHOLOGY.

[We are indebted to our friend Dr WALTON for the two following cases, the histories of which as drawn up by him cannot fail to interest and instruct our readers in the same proportion in which they have been gratifying to ourselves.—ED.]

6. *Abscess of the Liver communicating with the Duodenum; Perforation of the Stomach near the Pylorus.*—Edith Copeland, a coloured woman, aged about forty-five years, some time during the ninth month (September), 1827, first became sensible of pain in the right hypochondriac region, and soon afterwards she perceived a tumour forming in that situation. This enlargement gradually extended itself towards the left side, and its growth seemed constant during her life; great emaciation followed, and increased with the progress of the disease. Loss of appetite, constipation of the bowels, alternating with diarrhœa, restlessness, hectic fever, and night sweats, were the symptoms which were most frequently attendant. Towards the close of her disease she suffered very severe pain, and her emaciation became extreme.

As I did not see this patient until three months after the commencement of her disease, when it had made considerable advancement, there existed but little hope from the power of medicine. Blisters over the tumour were however applied; aperient pills were occasionally exhibited, and as seemed necessary, her sinking strength was in some measure upheld by tonic medicines, and a nourishing diet. At no period of my attendance would the general state of her system, which was feeble and exhausted, admit of the employment of active measures for the removal of her disease. At one time I tried the effect of gentle purging, with small doses of calomel; but so much diarrhœa, and consequent prostration followed, that I was obliged to prescribe anodyne injections, and a nourishing regimen, in order to counteract its injurious tendency. After an aggravation of every symptom of her complaint, her death occurred, about the close of the second month (February), 1828.

Dr ASHMEAD assisted in making the *post-mortem* examination. The lungs were found healthy in structure, but pale in colour, which was attributable to a general deficiency of blood in the vascular system. On opening the cavity of the abdomen, a confused mass of disorganized structure appeared. The omentum majus seemed, as it were, entangled with the convolutions of the intestines, and was adherent to them, at almost every part of its surface. The peritoneum bore evident marks of previous inflammation, and the abdomen contained about one pint of a yellowish fluid, in which particles of a coagulated substance were floating. The liver was much increased in its transverse dimension, and covered with an adventitious membrane of coagulated lymph, the production of that portion of the peritoneum investing its surface. Excepting the lobulus quadratus or anonymus, the structure of this viscus was pretty healthy. The lobulus quadratus projected far below the inferior edge of the liver, and appeared greatly enlarged. It was united to the duodenum, about two inches below the pylorus, and there existed in the intestine, at the place of attachment, an opening three inches in length. In this manner a complete communication was formed between the liver and the bowel, the result of inflammation, terminating in adhesion and ulceration. The parietes of the abscess were rough, dark-coloured, and gangrenous, and its contents were composed of a soft substance, much resembling the medullary part of the cerebrum. Its colour was that of a light pink, and its smell extremely fetid.

The stomach, duodenum, pancreas, cœliac artery, and much of the adjoining structure, presented such a confused and disorganised mass, that no regular and methodical examination of them separately could be made. The mucous coat of the stomach however appeared nearly white, and a complete perforation of its coats was discovered near the pyloric orifice, in diameter about the half of an inch. When incisions were made into the liver, healthy bile appeared, except-

ing from the diseased lobe. The gall bladder was natural, and contained a small quantity of bright yellow bile.

The peritoneum was generally in a diseased condition and exhibited marks of extensive inflammation; in many places it was covered with a layer of coagulated lymph; and enlarged blood vessels appeared on different portions of its surface.

7. *Tuberculation of the Lungs, Chronic Pleuritis, and Morbid Condition of the Stomach, in which the greater part of its mucous coat was removed.*—H. CLEVER, a coloured girl, aged five years, was attacked, about Christmas 1827, with rigors, severe cough, and vomiting. The cough continued, and from the account of the symptoms connected with it, as given by the parent, the case seems to have been one of pertussis. I did not see her until the 11th of the first month (January), 1828. The symptoms which then presented were, fever, irritated pulse, paroxysms of hectic, oppression and difficulty of breathing, hacking cough, performed by several quick expirations, followed by a discharge from the trachea and bronchiæ of a viscid mucus; and œdema of the lower extremities. From a collective view of her symptoms and appearance, she must have been affected with thoracic disease of a chronic character, for a considerable time anterior to the period noted in the commencement of this account. As may be inferred by a reference to the symptoms of this case, the prognosis was very unfavourable.

The treatment consisted of blisters applied in succession to the chest, the brown mixture as an expectorant, mucilaginous drinks, the warm bath, diuretics, and a restricted regimen.

The balsam copaiba in small doses, and repeated two or three times daily, was exhibited; it promoted the urinary discharge, and its effects in palliating the disease seemed for some time encouraging. When diarrhœa occurred in the course of the disease, small doses of calomel and opium were effectual in removing it. At one time I endeavoured to excite vomiting in order to relieve the oppressed state of the lungs; and although very large doses of antimonial wine were given, yet they passed off by the bowels without effecting the object in view. This circumstance may perhaps be explained by the concentration of excitability in the viscera and lining membrane of the chest, and by a reference to the diseased condition of the mucous tunic of the stomach, as subsequent examination disclosed. When, in cases of thoracic disease, this resistance to the proper operation of emetics is discovered, prudence would require that they should not be urged to any undue extent by a frequent repetition, or a greater increase of the dose.

Her death, which occurred about the close of the second month (February), 1828, was preceded by serous effusion into the cavity of the chest, short and difficult respiration, great exhaustion of strength, feeble pulse, &c.

In making the *post-mortem* examination I was assisted by my friend Dr ASHMEAD. The thorax being opened, the lung of the right side was found firmly adhering to the parietes of this cavity. A layer of coagulated lymph, in colour yellow, in thickness one quarter of an inch, firm, and consolidated, was adherent to nearly the whole of the exterior surface of the right lung. The latter was a mass of diseased structure: it was solidified and filled with white granular tubercles. Some bronchial cells remained, and these, with the bronchial tubes, were filled with bloody mucus. The left lung was less diseased, nor was it, like the right, adherent to the walls of the chest; small white granular tubercles were however found throughout its substance. We observed a considerable quantity of natural structure in it, which appeared to have been the chief of what escaped the ravages of disease, to serve the office of decarbonizing the blood. The lining membrane of the bronchiæ was reddened in patches, indicative of previous inflammation. The stomach was much diseased, and exhibited appearances by no means common. Its mucous coat, or more properly what little remained, was almost perfectly white. It was found only in the form of lines and patches; and about the pyloric orifice, its removal was so

complete, that the muscular laminæ, composed of pale well marked fibres, alone appeared. In those situations where the mucous coat had been absorbed, the stomach was exceedingly thin, and a slight force was sufficient to produce perforation.

The internal structure of the liver was natural, and healthy bile was found. On its convex surface there were a few white substances, from two to five lines in diameter, and on cutting them out they appeared to be formed of a hard matter, resembling cartilage. Evidences of sanguine irritation were seen on different parts of the intestinal mucous membrane. A worm, six inches in length, of the lumbricus species, was observed in the ileon, at a point which bore marks of high inflammation; and the same degree of vascular injection existed in the mucous lining of the bowels, eight or ten inches below. In some situations, near the upper part of the small intestines, there was a peculiar disease of the glands of PEYER and BRUNNER, in which they were enlarged and elevated into ridges, the effect evidently of chronic inflammation.

8. *Softening and Laceration of the Stomach in an Adult.*—In RUST's Mag. für die gesamm. heilk. 27 B. 1. h. 1828, is related the case of J. H., 18 years old, who had been for about 18 months affected with cramp of the stomach, which was most commonly brought on after the ingestion of food of difficult digestion and cold drinks. Eight weeks previous to the death of the patient, there occurred a severe vomiting and purging of dark coloured blood. Dr BARTH now for the first time saw the patient. His appearance was sallow and cachectic; he complained of a pain in the neighbourhood of the large extremity of the stomach, which was increased by pressure, and after eating indigestible food. On the 6th of September 1825, the patient, contrary to the advice of his physician, ate a hearty supper of potatoes, warm garden salad and hard boiled eggs; he now complained of an augmentation of the pain in the stomach; about 8 o'clock in the morning the pain was suddenly greatly increased, and extended over the whole abdomen. The case now had all the symptoms of a severe enteritis; by 6 o'clock, P.M. in spite of every remedy, death occurred. *Sectio cadaveris*, 24 hours after death. The abdomen was tympanitic, and when cut into, there escaped from its cavity a quantity of thin, fetid, purulent matter. The intestines, in their whole extent, presented traces of a recent inflammation, and externally, were covered with coagulable lymph; they adhered in many points to each other and to the peritoneum. The stomach was more minutely examined, and presented all the traces of inflammation as well exteriorly as within. At its larger extremity was discovered a softening, to a considerable extent, of all the coats; these were in a great measure reduced to a whitish jelly, which allowed itself to be torn easily between the fingers. In this softened portion were two ruptures; the smallest half an inch, and the largest one and a half inches long; the torn edges were smooth and even; the slightest touch of the finger produced other ruptures. In the stomach, as well as in the cavity of the abdomen, were found the undigested remains of the food which had been taken the evening before. In this case, it is asked, did the rupture of the softened coats of the stomach take place in the morning of the 7th, during the violent attack of cramp of that organ, the escape of its contents into the abdomen giving rise suddenly to the violent enteritis?

9. *Eruption of Measles confined to one half of the Body.*—A child three years of age had, for some time after its birth, been affected with a constant sweating of one half the body, which strange affection, however, had, after the use of general baths, disappeared for nearly two years; when during an epidemic occurrence of the measles, the child was attacked with them, but only on that side of the body which had been the seat of the previous perspiration. The patient passed safely through the attack.—*Rust's Mag. f. d. gesammte heilk.* 1828.

10. *Case of Hydrophobia from Cold.*—In RUST's Mag. vol. 27, No. 1, 1828, Dr BARTH relates the case of M. W. 40 years old, subject to hæmorrhoids and

hypochondriasis; he was affected with a profuse sweating of the feet, and according to his own statement, had already often suffered from cramps of the chest. On the 8th of Oct. 1825, in the afternoon, he bathed his feet, for the purpose of removing a very painful corn, during which the feet became very cold. The doctor was called to the patient at 7 o'clock in the evening, and found him labouring under violent general spasms of a clonic character, which had commenced about an hour before. The skin of the whole body was icy cold to the touch; the pulse small and convulsive (krampfhaft) but natural in respect to its frequency. The severe spasms, similar to those of opisthotonos, occurred every 8 or 10 minutes, and continued on about one minute. The doctor directed the feet to be immersed in warm water, and the patient to take some warm elder tea; but the moment the patient attempted to drink of the tea, he was suddenly seized with a most violent spasm of the throat and pharynx, and the fluid was immediately thrown out from the mouth; the eyes were convulsively distorted, the neck became frightfully distended and the head thrown backwards, the chest and abdomen were raised from the bed, while the hands and feet moved convulsively, and a hoarse sound like that made by a person suffocating, was uttered by the patient. The same symptoms were excited whenever any fluid was approached to the mouth. Sinapisms were applied to the chest and calves of the legs, an antispasmodic injection administered, and a pediluvium, rendered more irritating by the addition of salt and ashes, was directed. By these means the symptoms became less violent. At 3 o'clock in the morning, the patient could without any difficulty swallow fluids, a profuse sweat having broken out over the whole body, and especially upon the feet.

11. *Cholera Infantum.*—A very interesting article, by Dr Horner, of the University of Pennsylvania, is contained in the American Journal of the Medical Sciences for February of the present year, tending to prove that cholera infantum consists rather in an inflammation of the innumerable mucous glands or follicles, which extend throughout the alimentary canal, than in a common vascular or erythemoid inflammation of the intestinal mucous membrane. The post mortem appearances of several cases are related.

Case 1.—The patient, two years of age, had laboured under the usual symptoms of cholera infantum for three weeks. On examining the abdominal cavity, eighteen hours after death, the peritoneal surface of the viscera was found to be healthy; the liver of a light yellow colour; gall-bladder distended with bile; spleen healthy;—the mucous membrane of the stomach was "of a sienna colour, and of a consistency which permitted it to be scraped off very easily with the finger nail." In the small intestines this membrane was generally of the same colour, "but interspersed at distant intervals with patches of injected blood-vessels, but no extravasation. The clusters of muciparous glands, or follicles, were very distinct to the naked eye, and had their orifices also enlarged and tumid. The same condition of the muciparous follicles prevailed in the large intestines, from one end to the other, but they were larger and more tumid, and gave to the mucous coat somewhat the appearance of having been sparingly sprinkled with fine white sand. In both small and large intestines the mucus seemed less consistent than usual. The upper part of the small intestines contained yellow bile, almost pure, excepting some mixture of mucus. In the large intestines the contents were also bilious, but greenish, like the discharges which had prevailed during the disease. There was a small blue spot on the large intestine, the colour somewhat like chronic inflammation."

Case 2.—An infant, eighteen weeks old, had laboured under cholera infantum for a fortnight or more; on examination after death, the stomach was found empty and contracted, "its mucous coat of a light sienna colour, almost white, and destitute of blood-vessels, excepting a very few; the rugæ, well marked, laid for the most part in longitudinal rows, and so elevated that they were in contact. The mucous coat was also so soft that it could be scraped away easily, in the form of a pulp, with the finger nail." The small intestines were likewise of a light sienna colour on their mucous coat, and contained only a little mucus, here

and there greenish. The large intestines, of the same colour as the small, contained no fæces; but the inferior two-thirds of the colon were occupied, so as to form a slight distention, with pure, well elaborated, cream-coloured pus, of a proper consistency, and having only a very faint odour. "The muciparous glands of the colon were all enlarged, so as to present small grains of white sand sprinkled over the mucous membrane, and about the size of millet seed; there was in each a little depression, of a darker colour than the rest of the gland, which, from its position at the apex, was taken for the orifice of the gland. The muciparous glands of the small intestines were also tumid and irritated, but could not be so well distinguished at the time of examination as they were subsequently by maceration. In a few of these follicles ulceration had begun to show itself in both intestines, small and great, but only to an inconsiderable extent." Colour of the liver lighter than usual, and somewhat variegated by a yellowish ground being interspersed with its natural brown, otherwise healthy; gall-bladder distended with inspissated green bile; other viscera of the abdomen healthy. Dr H. is unable to say, positively, whether the consistency of the mucous coat of the stomach, observed in the above cases, was the effect of disease, or the normal state of the membrane at the age of the patients.

Case 3.—The subjects of this and of the former case were twins; continuance of the disease the same in both. Mucous coat of the stomach natural; duodenum contained healthy bile, and the other small intestines abounded in fœcal matter, of a light yellow colour; the same was also found in the cœcum, but in no other portion of the large intestines. The muciparous glands of the cœcum were very obviously enlarged, as also those of the sigmoid flexure of the colon, and of the rectum. A mucous inflammation was discovered on the lower portion of the ilium, and there was a considerable injection of the rectum, apparently of an inflammatory kind. Liver healthy.

The *4th case* is quoted from M. Billard. The patient, ten months old, had laboured under all the symptoms peculiar to cholera infantum, and on examining the alimentary canal after death, throughout its whole extent, appearances were discovered similar to those described in the two first cases related above, as indicating follicular inflammation.

The next case examined by Dr H., in which the ordinary symptoms of cholera infantum do not appear to have been present, is thus related:—"Miss P., aged two years, for about three weeks had been disposed to constipation, requiring the use of cathartics frequently. She was attended by Dr Dewees, who informs us that her stools had been white, with an absence of bile. Eight hours before her death she was seized with convulsions, which lasted to the end of life. *Autopsy.* Exterior aspect, nothing unusual; brain and membranes natural; lungs natural; half an ounce of straw-coloured transparent serum in the right pleura. Abdomen.—Peritoneum healthy; liver hard, and of a yellowish hue; stomach of usual thickness; its mucous coat could be scraped off with the finger nail, and was of a pearl or sienna colour, interspersed every few lines with small specks of blood, of a light pink colour, and not larger than the head of a very small pin; the mucous membrane was also smeared all over with a coat of tenaceous mucus, and, at the left end of the stomach, was of a light gamboge colour, which I attributed to bile dying it. The intestines were distended with flatus, and of a light pearl colour. Nothing pathological could be detected in the small ones, but in the large, all the muciparous follicles, from one end to the other, seemed to be affected. These follicles were converted into small cysts, of the transparency and size of the itch vesicle, and on being punctured with a needle, and pressed, readily gave out their transparent fluid. Their orifices could be seen very readily with the assistance of a lens, and appeared to be closed generally, but some were open, and slightly ulcerated; neither could a distinction of colour be observed between these orifices and the remainder of the gland."

"I have now," observes Dr H., "adduced a sufficiency of evidence to excite an inquiry, and perhaps to lead to the conclusion, that cholera infantum is pathologically a follicular inflammation of the intestinal tube, attended with in-

creased peristaltic motion in most cases, but not in all; and in its extreme stages, existing in various sympathies of the different organs of the body. In its anatomical characters at least, it has a very strong resemblance to the vesicular diseases of the skin, and in its extreme stages it seems to progress from the interior to the exterior of the body, showing itself in the mouth by inflammation of the mucous follicles there, (apthæ) and on the skin by an irritation of the follicular system, the appearance of which has been compared by Dr DEWEES to the vesicles which would be produced by an immense number of minute drops of scalding water."

12. *Synovitis.*—The following cases of synovitis terminating fatally, with the post mortem examinations, are contained in the London Medical and Surgical Journal for December 1828.

Case 1.—James Connel, sailor, æt. 56, was admitted into the Glasgow Infirmary December 26, 1827, for a moderate sized hydrocele of the right side, which was treated on the following day by evacuating the fluid with a lancet, and cutting off a minute portion of the tunica vaginalis with scissors. January 12th he was dismissed cured. Three days after he returned; a very small quantity of matter having collected under the integuments at the seat of puncture. The part was laid open and dressed, and by the 27th January the wound had almost cicatrized. On that day he was employed, when lightly dressed, in applying leeches to another patient; and in the evening he had a rigor. On the morning of the 28th he complained of occasional obtuse pain in the calf of the left leg, and in the left knee. In the evening the pain had shifted to the right calf and right knee. On the 29th the pains were felt in both legs alternately, but without constitutional disturbance. In the evening he had another rigor, after which the pain attacked the right shoulder joint. On the 30th the pain was more severe in the right shoulder, but neither there, nor in any of the parts already mentioned, was either swelling or discoloration to be discovered. His pulse was now quick, his tongue brownish, and he complained of oppression at the præcordia. In the evening he had a severe rigor, hiccoughed occasionally, and complained much of pain in the right shoulder, left knee, and left calf, in the last of which there was now considerable tense swelling, but no discoloration. Notwithstanding the free use of purgatives, antimonials, leeches and evaporating lotions from the first appearance of the symptoms, he sank under the disease, and died on the morning of the 31st. On examination after death, the integuments of the calves of the legs, particularly of the left leg, were found distended with brownish serum, and the cellular connections of the muscles of the calf contained a similar fluid. In the left knee joint there were a few drachms of thick pus, but no vascularity or swelling of the lining membrane. Integuments on the inner side of the right shoulder were similarly affected; there was a very small quantity of thick pus in the bursa under the deltoid muscle, and a very small quantity within the joint. Thoracic and abdominal viscera healthy.

Case 2.—J. M'Cormick, æt. 43, porter, was admitted, October 13th, 1827, for retention of urine from chronic enlargement of the prostate gland. With some difficulty a good sized elastic catheter was passed into the bladder; and on the 17th, four days after admission, he had recovered the power of voiding his urine. On that day he complained of pains in both shoulders, for which vinum colchici was prescribed. After two days the pains removed to the left knee and left elbow; they were very severe, and accompanied with swelling in both joints. On the 24th some external redness was perceptible, and on the 27th, fluctuation being distinct near the elbow, a puncture was made, and about an ounce of pus discharged. The affection of the left knee followed the same course. On November 2d, although the patient was evidently sinking, the abscess was opened, and eight ounces of pus evacuated. On the following night he died. The fever in this case was considerable, and, during the last seven days of the disease, was accompanied with delirium, and a deep yellow colour of the whole skin. Leeches, purgatives, opiates, and cataplasms were employed freely with very partial advantage. After death, the left elbow joint was found to contain a large quantity

of thick pus, which communicated with the external opening by a sinus behind the external condyle. The external condyle, within the joint, was denuded of its cartilage, and rough. The head of the radius was similarly affected. The left knee joint was full of pus, and the pus passed upwards to the extent of five inches, betwixt the vastus externus muscle and the femur. There was a false passage connected with the urethra. The prostate gland was about twice the natural size. The viscera of the thorax and abdomen were natural.

13. *Epidemic at Paris.*—During the past year the city of Paris has been visited by an epidemic, the following account of which we copy from the 11th number of the Journal des Progres, &c.: The invasion of the disease was sometimes sudden, and at others preceded by chills, a sense of uneasiness, lassitude, feebleness, pains more or less acute in the limbs, and vomiting. The symptoms the most constant, and at the same time pathognomic, were a pricking and formication in the hands and feet, with heat and swelling of these parts. During the presence of these symptoms the patients were unable to close their hands, and if they put their feet to the ground, it appeared to them as though they were walking upon thorns. Sometimes the sensibility of these parts was extremely augmented; the least touch could not be supported; and painful cramps were felt throughout the limbs. Almost invariably the heat and pain of the extremities were increased at night. Very often, while the feet and hands were thus affected, an enormous swelling of the face and scalp took place, but this symptom was not permanent; the eyes were painful; the eyelids were œdematous, or their edges were red. Sometimes the epidermis of the feet and hands became thickened; detached itself in large patches, and was then renewed. Occasionally spots occurred upon the skin, of a blackish or sooty colour, without elevation or increased heat: this appearance was observed particularly upon the chest and abdomen. Sometimes the hands and feet became covered with phlyctænæ, containing a bluish or reddish serum. This phenomenon was almost invariably followed by an amelioration in all the symptoms. The disease was unaccompanied with fever, and although symptoms of an affection of the digestive organs were frequently observed to be present, as also cephalalgia, yet these appeared to have constituted rather a complication than any part of the disease itself. This peculiar affection was in some instances complicated with inflammation of the organs contained in the different cavities, in others with scrofula, &c. Its duration was occasionally some days, and not unfrequently, from two to three months. Various opinions have been advanced as to its remote and proximate causes. It occurred only among the soldiers and persons of the poorer class. It was remarked that the soldiers affected by it were those especially who lodged in the most humid and worst ventilated apartments of the barracks, and likewise that the poor who inhabited narrow and damp streets, and dwellings excluded from the air and sun, were those most commonly attacked; to which it may be added that the summer had been constantly rainy. But a circumstance which appears to merit particular attention in our inquiries into the causes of this disease, is, that at the time it prevailed, bread was very dear; and the poor of Paris, who live almost entirely upon it, were obliged to purchase that of an inferior quality, which was baked for their use. The soldiers ate also bread of a similar kind. With respect to the immediate cause of the disease, it has been sought for in inflammation of the spinal marrow; it is however certain, that in the few post mortem examinations that have been made, the spinal marrow has not been found diseased, excepting when a paraplegia has been mistaken for the disease described. Others have considered it an inflammation of the cellular tissue, and M. Recamier has suggested that it may be a variety of scurvy. According to the editor of the journal from which this account is taken, the disease is the effect of an inflammation of the arteries or veins; at least he conceives it to present in its symptoms and causes a great analogy to diseases of these vessels. The plans of treatment have been still more various than the opinions as to its nature. By some were employed the remedies usually directed for affections of the spinal marrow; as bleeding, cups, blisters, moxa, strychnine, &c.; others

employed the cinchona in large doses, sulphurous baths, and various purgatives. M. RECAMIER has derived some advantage from the employment of the juice of the sorrel. The means which have had most success, and which appear, when their use has been continued for a sufficient time, to have produced always an amendment in the symptoms of the disease, are bleeding general or topical, general or local baths, emollients, sometimes rendered narcotic, and a change of regimen.

14. *Mania produced by Indigestion.*—This interesting case, reported by M. J. DE SOUSA FERRAS, is copied from the Journ. Univers. des Sciences Medical. for Sept. 1828. A Portuguese woman, forty-two years old, had been invited by some females of her acquaintance to eat cakes and drink liquor; in making the cakes they had introduced into them portions of twisted hair, as a charm. This it appears is a species of witchcraft much employed by the negroes of Brazil. For twenty-four hours after partaking of these cakes the woman experienced only a loss of appetite, but subsequently there occurred nausea, an oppression at the stomach, and at length, a complete derangement of the mind; with watchfulness, and absence of all desire to eat or drink. In this condition, a state of stupor was succeeded by a wild gaiety, and this by raging delirium; under these symptoms she continued two days; M. SOUSA being then called in and informed of what had taken place, directed an emetic; this brought up from the stomach a ball of hair of the size of a chestnut. The delirium ceased immediately, and the only symptom of disease which remained was considerable debility.

15. *Colica Pictonum.*—From a long but very excellent "Memoir upon the Colic produced by Lead," by N P. ANGUETIN, M.D. contained in the October (1828) number of the Journ. General de Medecine, we copy the following general conclusions as to its pathology, which the author conceives to be fairly deduced from the facts and arguments which he has advanced.

"The lead does not act immmediately upon the coats of the intestinal canal; and the symptoms of the lead colic cannot be attributed to an inflammation of the mucous membrane of the intestines."

"To produce the phenomena which constitute the colic from lead, it is necessary that the lead penetrate into our organs by absorption, either from the intestines, the lungs, or from the surface of the body."

"When thus introduced into the system, it acts first upon the nervous system, that is to say, upon the brain, the spinal marrow and the trisplanchnic nerve, which form an inseparable whole."

"This action of the metal upon the nervous system produces in certain cases symptoms of encephalitis, or of myelitis, but most commonly it occasions a spasmodic and painful contraction of the muscles of the intestines and of many other parts of the body."

"If we were to form a scale of all the diseases of the intestinal canal, we would place at the two extremities cholera morbus and the colic from lead: In the one, the secretory functions of the intestinal tube and of its appendices are exalted to the highest degree, while its peristaltic movement is augmented in a similar proportion; in the other, all the secretions are suspended, and the peristaltic motion ceases in consequence of a tetanic condition of the muscular coat."

16. *Pulmonary Tubercles.*—In the October number of the Ephemerides Medicales (1828), is a very interesting analysis of an essay upon tubercles by HENRI CLERMOND LOMBARD of Geneva. According to this author, tubercles are an inorganic secretion, and augment in size by juxta position. He distinguishes them into simple and compound. The first are isolated, and the different molecules of which they are composed are united without any intermediate substance; the second result from the agglomeration of several simple tubercles; these, originally separated, in approaching each other, enclose in their intervals a

portion of the organ in which they are developed, the life of which is destroyed by the tubercle thus formed.

Contrary to the opinion of LAENNEC and LOUIS, M. LOMBARD maintains that what have been termed pulmonary granulations are not tubercles in their commencing state, but a variety of chronic pneumonia, a hypertrophy of the vesicular parietes, as ANDRAL had already described them to be. They may also, M. LOMBARD is convinced, be the result of a hypertrophy of the external cellular coat of the pulmonary vessels.

According to LAENNEC, LOUIS, and others, tubercles become softened from the centre to the circumference: this opinion is combated by the present author; according to him the softening is produced by the action of the surrounding living structure in its attempt to free itself from this morbid secretion, which, as a foreign body, impedes its functions. The molecules of the tubercle are separated from each other and softened by the pus secreted around them; in this state of fluidity they are readily expelled. The softening, therefore, according to M. LOMBARD, takes place from the circumference towards the centre of the tubercle.

What is the seat of tubercles? Are they developed in the cellular tissue which unites the different portions of an organ; or do they form upon the surface of the mucous membranes? BAYLE, BAILLIE, and BLAINVILLE consider the first opinion as demonstrated; LAENNEC and LOUIS think it probable that they may be developed upon mucous surfaces, while, according to CRUVELLIER, this is undoubtedly the case. M. LOMBARD is of opinion, that no facts have as yet occurred to demonstrate the latter supposition; he conceives it very probable that tubercles are developed in the cellular tissue, and that if they have been found in the different canals, or in the cavities of the body, this has been in consequence of erosion or ulceration having permitted them to be removed from the part in which they were originally deposited. That tubercles are not formed, as some have supposed, within the bronchia or air cells of the lungs, would appear to be proved by the observations of GENDRIN, who ascertained by injections and microscopical examinations, that the bronchia were free and permeable, notwithstanding the existence of tubercles in the lungs; it is thus he distinguishes them from the morbid muco-purulent secretion which fills the final air-cells in severe cases of bronchial catarrh, and which many physicians have confounded with tubercles.

With respect to the connection between inflammation and tubercles, whether it is sufficient for their production, or, as some maintain, has no effect whatever upon them; M. LOMBARD, taking the medium between these two extremes, is of opinion that it acts only as their occasional cause.

According to M LOMBARD, the remote causes of tubercles are a hereditary predisposition, the lymphatic temperament, the sanguineo-nervous temperament, a cold and humid state of the atmosphere, inhabiting unhealthy situations, youth, the female sex, and an alteration of the fluids arising from bad food. The occasional are, sanguine or passive congestions, the sur-activity of one or more organs, and the alteration of the fluids.

17. *Perforation of the Stomach without Softening.*—In RUST's Magazine, No. 1, for 1828, is "an account of a disease of the stomach producing a regular perforation of that organ without softening," by Dr C. H. EBERMAIER of Dusseldorf, of which the following is an analysis.

A girl, 22 years old, of a strong constitution, had suffered from no serious disease, menstruated for the first time in her 18th year; one year subsequently her menses were suspended, of the cause of which she was ignorant. The suppression did not produce for some months any inconvenience; then, however, her digestion was disturbed, the stomach could support only the lightest aliments, and soon, even these produced a sense of weight at the epigastrium, acid eructations, and vomiting a few hours after they were taken. These affections were not, however, so severe as to oblige the patient to give up her usual laborious occupations. She had for some time been under medical treatment, with a view

to reestablish her menstrual discharges, and to allay the symptoms of gastric disease: but all means had been without effect, and she had resigned herself to her condition, without any further efforts at relief. In the symptoms under which she laboured there was nothing alarming until the day of her death. She was occupied in gathering fruit in a garden, when suddenly she cried out and fell. She experienced then violent pains in the stomach and abdomen, her face and extremities became pale and cold, there was insatiate thirst and the greatest anxiety; the feebleness increased every moment; involuntary discharges of urine and fæces took place, but no attempt to vomit; the intellectual faculties were unimpaired even to the moment of death, which speedily ensued. On examining the body it was found well proportioned, and exhibiting no appearances of cachexy. The abdomen being opened, a considerable amount of a turbid fluid ran out, but there were no traces of inflammation, adhesion or of exudation. The internal organs of generation were in a state of atrophy and hardened. The stomach was empty and flaccid; it presented on its anterior surface, at the small curvature near the pylorus, a perforation of a round form with an even edge; the perforation penetrated in an oblique direction the parietes of the stomach, which were half an inch thick. This augmented thickness was owing to a morbid alteration at the exterior of the stomach, consisting in a hard, fibrous, and lobulated body, which covered the greater part of the organ, and adhered to its peritoneal coat by its centre. In the midst of this body the perforation was situated, having a diameter of about seven or eight lines. The mucous coat was perfectly healthy even in the neighbourhood of the perforation.

Dr E. cites several instances of similar perforations from various recent authors. From all the facts he has been able to collect he establishes the following corollaries.

1. In all the analogous cases the details of which are known, the disease has followed a course decidedly chronic and latent: it has always in its development occupied many years.

2. During life nothing has appeared to indicate the serious character of the disease; nor from which could be anticipated the fatal issue which occurred so suddenly.

3. The remote cause has been ordinarily the suppression of some secretory action, which has a close connexion with the digestive apparatus. The symptoms never presented those complete intermissions remarked in purely nervous cardialgia.

4. Notwithstanding the long duration of the disease no appearances of cachexy were developed; nutrition was perfectly performed, although vomiting frequently occurred. Very rarely emaciation to any extent was present.

5. In no case were there any traces of inflammation, suppuration, ulceration, or erosion, &c. The parietes of the stomach were healthy excepting in the immediate vicinity of the perforation. They were pale, and deprived of blood: rarely did there exist any patches of red or traces of congestion.

6. The perforation, which occurred always at the pyloric extremity, presented invariably an appearance as though a portion of the stomach had been cut out; it was of some extent, round and without softening of its edge, which was thick and hard, but not tuberculous, and of a cartilaginous appearance. The induration was of small extent, and insensibly lost itself in the healthy tissue. According to Dr E. these perforations are not produced in consequence of a violent spasm of the stomach, as supposed by Desgranges, nor by a cancerous softening or ulceration, nor by chronic inflammation and ordinary suppuration, nor finally, by a softening with thinning of the coats of the stomach. In the perforation under consideration, the destruction of the coats of the organ does not commence at the mucous membrane, but it commences at the serous first, by induration. The mucous and muscular coats remain healthy even in the vicinity of the perforation.

18. *Transformation of the Tissue of the Heart into a Mass of Fat.*—A

young girl, whose father was affected with constitutional syphilis, passed her youth without any serious disease; but in her nineteenth year, a scrofulous tumefaction of the upper lip and glands of the neck, of considerable extent, presented itself; subsequently, she was attacked with symptoms of a gouty and rheumatic character. Her sleep was agitated and attended by dreams; the least motion occasioned her to be greatly fatigued; the left side of the thorax was the seat of a pricking sensation; she had a cough frequently accompanied with bloody expectoration, and the debility of the patient was such as many times to cause fainting. The pulse although frequent was always regular; decubitus upon the side occasioned a peculiar uneasiness. Frequently a burning sensation was experienced internally at the same time that the surface felt cold. At a later period the cheeks and fingers of the patient were of a bluish cast; the pulsations of the heart were so weak that they could not be felt through the parietes of the thorax; menstruation was suppressed; cold sweats now occurred, with coma, and at the end of the tenth month death took place. On opening the body the lungs were found adhering in many points to the pleura costalis and pericardium. On the internal surface of the latter there existed solid filaments of a yellowish white colour, about two to three lines in length, and placed one over the other; some of these passed to the heart, the external surface of which was also beset with similar filaments, which originated in a fatty mass of a grayish yellow colour, and which composed two-thirds of the heart. The other organs were healthy, with the exception of the spleen, which was somewhat enlarged. This case is related by Dr Simions of Heppenheim, in the *Heidelberg. Klinisch. Annal. for* 1827.

19. *Case of Coryza with False Membranes formed upon the Schneiderian Surfaces.*—L. L. aged three and a half years, for some time a patient of the Hospital for Infants, in consequence of rachitis, on the 31st of March 1819 was attacked with loss of appetite, vomiting, cough, sneezing and fever. Between the 1st and 2d of April, an eruption of measles took place, with pain of the throat, frequent and dry cough, an accelerated pulse, heat of the skin, thirst, a moist and white tongue. On the 5th of the month, the respiration was observed to be impeded, and on the next day the face was greatly swollen, the nose red and scurfy, there was great difficulty of breathing, the voice was extinct, cough dry and frequent, the chest was sonorous, the bowels constipated. Four leeches applied to the throat, a blister at the back of the neck, an oleaginous julep was directed and an injection. The patient died at 10 o'clock. *Autopsis.* Brain natural; the cerebral sinus contained a great amount of blood. The mucous membrane of the nasal cavities was very much injected, and covered with mucus and with shreds of a membranous appearance. The pharynx was of a bright red, without any traces of a false membrane; the larynx and trachea presented no evidence of disease. The inferior lobe of the right lung hardened and red, did not entirely sink in water; the other lobes simply injected; the bronchial glands of this side, large and inflamed. The left lung was engorged with blood, but crepitated and did not sink in water. A whitish tuberculous mass was found situated beneath the pleura, and extending to about the depth of a line into the substance of the lung. Stomach healthy, distended with gas; a few red patches were observed in different parts of the small intestines; two-thirds of the colon were in a state of contraction, its iliac portion was dilated, in the remainder of the large intestines, and in the other viscera of the abdomen there was nothing remarkable; upon the skin there was no trace of the eruption. The foregoing is related by Dr Guibert in the *Journ. Universel, Sept.* 1828. In concluding the case Dr G. remarks, that the very intense inflammation of the mucous membrane of the nose which occurred in it is the more remarkable, as it must be regarded as one of the principal causes of death, the partial pneumonia of the right lung being in effect of too little extent to have occasioned so rapidly a fatal termination.

IV. THERAPEUTICS, MATERIA MEDICA, AND THE PRACTICE OF MEDICINE.

20. *Accidental Cure of an Extensive Inflammation of the Tongue.*—This case is copied in the Journal of HUFELAND and OSANN (June 1828) from Die Vierteljährigen Sanitätsberichten. An individual, 40 years old, in November 1827, became suddenly affected with a prodigious swelling of the tongue, which interfered so much with respiration as nearly to occasion suffocation. A messenger was sent to the nearest physician, who being engaged, directed that for the present, frictions should be freely made upon the fore part of the throat and under the chin, with a mixture of the liniment. ammoniat. camph. and ung. hydrar. cinereum, āā. six drachms, and that the tongue as it protruded beyond the mouth, should be exposed frequently to the vapour arising from a decoction of wheat bran in water; promising to see the patient as soon as possible. The messenger when he returned found the patient in the utmost agony, and on the point of suffocating: he hastened, therefore, to prepare the decoction, to which, forgetting the directions of the physician, he added the liniment also. The ammoniacal fumes copiously given out nearly stifled the poor sufferer; he had, however, scarcely continued the application of the vapour fifteen minutes, before a copious discharge of mucus covered the tongue, which, until then, had been dry and parched; the inflammation and swelling were reduced, and, before the expiration of an hour, the patient was so far out of danger that a few doses of the infus. sennæ. compos. directed by the physician, who soon after arrived, completed the cure.

21. *Cod Oil in Scrofulous Ulcers.*—In the Jour. der Practisch. Heilk., June 1828, it is stated that Dr GUMPERT had found the cod oil very efficacious in a case of scrofulous ulceration of the skin with complete tabes: after from two to three spoonfuls of the oil had been used, the ulceration gradually assumed a better appearance; the body of the patient increased in strength and volume, and in three months a cure was effected.

22. *Acupuncturation in Rheumatism.*—The following interesting cases, showing the striking effects of acupuncturation in the removal of rheumatic pains, are related by Dr Jos. BERNSTEIN of Warsaw, in HUFELAND and OSANN's Journal der Practischen Heilk., August, 1828. From the benefit we have ourselves experienced from this operation, particularly in the disease referred to, we are persuaded too little attention has been paid to it in this country.

Case 1. N., a man 54 years old, of a sound constitution, from exposure to cold during the winter, became affected with a violent rheumatic pain of the upper part of the arm. A variety of remedies were employed without effecting any permanent removal of the disease. Six months had elapsed since the commencement of the attack, when Dr B. was called in. The affected shoulder was neither red nor swollen—the patient could move the arm easily forward and without pain; but by the motion of the arm either upwards or backwards the pain was greatly increased. The pain was not augmented by pressure. The health of the patient was otherwise tolerably good. A large blister was directed to the arm in the neighbourhood of the deltoid muscle, at which place the pain was the most severe during the motions of the arm; the blister was kept open for four weeks, at the termination of which period an evident diminution of the disease was experienced; circumstances relating to the patient's occupation now rendered it necessary that the blistered surface should be allowed to heal, although the disease was not yet entirely removed. The patient continued six weeks without medicine of any kind: the motions of the arm upwards and backwards were still painful. Acupuncturation was then resorted to. On the first day five needles were inserted near the insertion of the deltoides, three 1 1-2 inches in a perpendicular direction, and two, after being passed to the same depth perpendicularly, were then directed obliquely in the course of the muscles of the

arm. After 15 minutes the needles were removed in the same direction in which they were inserted. The introduction of the needles caused little pain, but their extraction somewhat more. The patient was now directed to move his arm; and he was of opinion that the disease was already evidently diminished. On the second day less pain was felt at the spot where the needles were inserted, but still some was experienced when he attempted to raise his arm upwards. Five needles were again inserted and left in twenty minutes. The pain was evidently diminished. Third day, the pain was felt lower down, and the needles were here inserted—pain diminished. In this manner constantly for two weeks was the operation repeated on different parts of the arm at which the pain was experienced, and finally the disease was entirely removed. "Seven months have now elapsed," says Dr B., "and notwithstanding this individual has been exposed to cold and dampness there has been no return of the pain."

Case 2. A. L., 27 years old, of a sound, robust constitution, contracted by exposure to cold a rheumatism of the right lower extremity, extending from the hip joint and glutei muscles to the calf of the leg. Its removal had been attempted by diaphoretics internally, and frictions with the volatile liniment to the seat of the disease: by this treatment the pains were increased rather than diminished. Dr B. saw the patient about six weeks from the commencement of the attack: the pulse was full, not accelerated, but very strong—venesection to 12 oz. was directed, to be followed by 20 leeches to the affected parts. By this the pain in the thigh and neighbourhood of the hip joint was very considerably diminished, but not entirely removed—the patient also complained of a weakness of the foot, preventing him from treading upon it with firmness. He was now placed upon a proper diet and regimen, with no other medicine than was necessary to preserve an open condition of his bowels; after several days a pain was experienced extending more into the hollow of the hip—the patient could not walk without pain—he could, however, tread upon the sole of the foot, and stand firmly on both legs, but could not turn the foot on the affected side, in all directions, without some pain. No flattening of the buttock on the side diseased. A blister was directed, but objected to by the patient—acupuncturation was then proposed, and agreed to: 10 needles were inserted, near the hip joint, in a perpendicular direction, and allowed to remain in 15 minutes; immediately upon their extraction a diminution of the pain of the hip was experienced; on the next day pain of the hip less, but it was more severe in the buttock—here 10 needles were introduced, and 5 at the hip joint. Third day, hip free from pain, and considerably less pain was also felt at the buttock; for 12 days a dozen needles were daily inserted at different parts of the thigh and leg—and by degrees the pain was entirely removed. "Ten months have now elapsed and the patient has had no return of the disease: it is proper to remark, that during the whole time acupuncturation was employed the patient followed his usual occupations."

Case 3. W. S., 25 years of age, had been for twelve months occasionally affected with a pain of the head, particularly of the left temple. The pain continued usually for a day or two, and was often so severe as to prevent the patient from attending to his business. Subsequently the pain recurred regularly every month; it was preceded by no chill, nor attended by any fever or perspiration; the urine was, however, clouded. The case was at first treated for a *febris intermittens larvata;* the patient happening, however, to witness the operation of acupuncturation, requested that it might be tried in his case; he was accordingly directed to remain without medicine until the next paroxysm occurred, when a fold of the skin being raised at the seat of the pain, through it were inserted six steel needles; after fifteen minutes they were removed, and it was found that the pain had entirely disappeared. The ensuing month the pain again returned, but with less severity; the introduction of the needles was repeated, and in ten minutes the pain was entirely gone, "nor has it again returned, although eight months have elapsed since the operation was last performed; previously, for a twelve-month, the pain had recurred regularly every month."

Case 4. This was an inflammatory affection of the left arm, extending from the shoulder to the elbow, and produced by the patient having three days before

carried a basket heavily loaded with wood up a steep hill. By the advice of a surgeon she had lost three cups of blood, had twenty leeches applied to the affected arm, followed by frictions with the volatile liniment. When Dr B. saw the patient, the arm was greatly swollen and red; the slightest touch, and every motion of the limb increased the pain; the pulse quick, full, and hard. The patient was upwards of 45 years old, of a robust constitution, and had previously enjoyed good health. Notwithstanding the symptoms of this case appeared to call for the continuance of depletory measures, yet several circumstances induced Dr B. previously to try the effects of acupuncturation; 15 needles were accordingly inserted at the seat of the disease, in various directions; when, after fifteen minutes, they were withdrawn, the patient declared that her sufferings were much lessened, and she was able to move the arm freely. She besought Dr B. to permit her to return the following day, in order that, by a repetition of the operation, her pain might be entirely removed. Nothing more, however, was seen of this patient for two months, when she came to the doctor's house in company with another patient. She then stated that the day after the operation, all pain having ceased, and the free motion of the arm in every direction having returned, she had therefore not thought it necessary to trouble the doctor. No remedy of any kind, excepting the acupuncturation, had been employed.

Case 5. K., a man about 40 years old, had for two years laboured under a pain of the loins, which finally arose to such a height as to prevent him from following his business. Every motion of the lower extremities augmented the pain, and a recumbent posture was the only one, frequently, in which any ease could be obtained. There was no fever, the appetite was diminished, the tongue covered with a white fur; great tendency to constipation. An interrupted state of the circulation through the abdominal vessels was evinced by the sallow complexion, uneasy feelings in the abdomen, frequent griping pains in the region of the stomach, and the occasional fits of peevishness to which the patient was subject, without any external cause; no hardness or swelling in the abdomen could be detected. The patient was, during three weeks, treated by gentle resolvents, and an occasional cathartic. Under these remedies his general health improved—tongue cleaner, appetite restored, and the inclination to peevishness removed; but the pain in the loins was in no degree abated. For two weeks all remedies were discontinued, at the end of which time, the pain still continuing, five needles were inserted on each side of the loins; after fifteen minutes they were withdrawn, and the pain was found lessened at the place of their insertion, but removed lower down. For ten days the operation was repeated daily on that part to which the pain was successively removed, and the patient was then enabled, without inconvenience, to bend and turn himself in every direction, which he had been unable to do for two years. "Twelve months have now elapsed since the last performance of the operation, and the condition of the patient is still the same."

Case 6. A man, about 40 years old, had for eight weeks been affected with a chronic rheumatic inflammation of the left eye, with opacity of the cornea. The usual remedies had been employed without effect. When Dr B. saw the patient he still complained of pain of the head and eye. Blisters were directed to the back of the neck, to the fontanels, and to both arms, with various remedies internally; these produced no effect. For two weeks all medicines suspended; acupuncturation was now performed, and the inflammation of the eye and pain of the head were entirely removed. The opacity of the cornea was also considerably diminished. The operation was repeated daily for two months, to ascertain its effects upon the latter, when, to the astonishment of the doctor, he found that the spot upon the cornea was reduced to less than one half its original size, and its opacity so much diminished that it interfered very little with the patient's sight.

23. *Effects of Croton Oil absorbed by the Hand.*—In the London Medical and Surgical Journal for December, we read the following account:—"The sister and nurse of one of the wards of Guy's Hospital were one day employed in rubbing the oil of croton upon the abdomen of a patient obstinately constipated.

About three hours afterwards the sister (of the patient or of the ward?) who had most freely used it, found herself smartly purged, at the same time feeling a peculiar sensation through her whole frame, and a nauseous taste in her mouth. Shortly after the nurse also was seized with purging, though with less severity than the sister, and unaccompanied by any other symptoms. On the patient himself it did not act, which was explained by the disclosure, on the inspection post mortem, of a complete mechanical obstruction."

24. *Tartar Emetic in Rheumatism.*—M. LAFOSSE, of Montpellier, details two cases of this disease successfully treated by Professor LALLEMAND. The remedy was tartar emetic. Bleeding by leeches in the first, and general and local depletion in the second case, together with emollient cataplasms to the joints in both, failed to give relief. Four grains of tartar emetic, to be taken in four doses in the course of the day, were then prescribed for the first patient, affected with coxo-femoral pain, and repeated on the following day. Six grains were next prescribed, to be taken in six doses, and this treatment was continued for five days longer, when the patient, a soldier, aged 23 years, was quite recovered. The next, also a soldier, aged 21 years, suffering from acute rheumatic pain of the right knee, took the antimony as above, four grains in the day, and continued its use for eight days, after which time he was declared convalescent. Nausea was felt by both of these patients during the first day's administration of the remedy.

We have ourselves used tartar emetic in full doses, similar to the foregoing ones, on patients affected with rheumatism, at the Philadelphia Dispensary, and with decided success.

25. *On the Nature and Treatment of Cholera.*—Dr CHRISTIE, of the Madras Medical Establishment, finding that the morbid appearances in cholera are invariably confined to the mucous system, has made a division of the disease into—1. Inflammation; 2. Catarrh. Catarrh he defines to consist of a diseased action of a secretory apparatus of a mucous membrane, which produces an increased and vitiated secretion; it may occur conjointly with inflammation. In all Dr C.'s dissections, he has found the following appearances: a whitish, opaque, viscid substance, adhering to some portions of the mucous membranes, sometimes very abundant; the stomach and portions of the intestine were filled with a transparent or turbid serous fluid; and, frequently, the viscid matter above mentioned was found mixed with it, or floating in it, in the form of flakes. The mucous membranes, except when inflamed, had an unnatural whiteness, and could, generally, be detached, by scraping, in the form of a thick pulp, from the subjacent coat. The secretion has sometimes been observed to be bloody, at others, of the colour and consistence of cream. The morbid appearances next in frequency are venous congestion of the viscera, particularly of the abdomen; dark coloured blood in the veins, sometimes in the left side of the heart, and inflammation of the mucous membranes, generally confined to the pyloric extremity of the stomach and small intestines. The blood drawn from cholera patients is sometimes perfectly black, of the consistence of liquid honey, or forming, after a few minutes exposure, an uniform coagulum, without separating into serum and crassamentum; sometimes it is of the usual dark colour, with red streaks, and sometimes nearly natural. Dr C. has proved by experiments that the fluid part of the secretions is pure serum, and the coagulated part fibrin.

The distinction drawn by the author between the catarrhal and inflammatory cholera, does not seem to be carried out by him in practice, both species being treated by the same remedies. Of course we cannot coincide in his assertion of the effects of the two on the heart and arteries being very different, nay, completely opposite.

First, in the catalogue of remedial means recommended by Dr C. for cholera, is blood-letting, to be employed not only in the robust European, but the delicate native, and not only where there is increased action in the circulation, but in every case where blood can be obtained, except, however, where great debility has existed previously to the attack of the disease.

Blisters to the abdomen, and cataplasms of mustard and capsicum to the feet and legs, with hot sand in friction to the arms and hands, are also beneficial.

In catarrhal cholera, opium, according to Dr CHRISTIE, is given to suppress the vomiting and purging, to alleviate spasms, and assist in restoring the circulation to the surface. In inflammatory cholera it is only given to allay the vomiting. Alcohol, ether, and other stimulants, are only admissible in the latter stages of the disease; but calomel is one of the most extensively useful medicines we possess for the treatment of cholera; it is used in both forms of the disease, either alone, or in combination with cathartics, or in the catarrhal form with opium.

We are indebted to the London Medical and Surgical Journal for the above notice of Dr CHRISTIE's work. We have only, in conclusion, to express our doubts of the propriety of that part of the treatment of cholera which consists in the administration of calomel, without any particular restrictions, and of purgatives, as legitimate inferences from, or safe applications of, the declared inflammatory or catarrhal condition of the digestive mucous membranes. We are inclined to regard this as an example of the predominance of habit and routine over demonstrative proof and reasoning.

26. *Case of Inflamed Lymphatics cured by a Blister.*—This case is recorded of himself by Dr EPPS, one of the editors of the London Medical and Surgical Journal. On Tuesday, November 4, he felt a soreness of the thumb. On Thursday morning the pain was considerably increased; the thumb was quite puffed up, and there existed a livid redness all over it. A dull uneasy sensation was felt up the arm, and a streak of red passing along was perceptible; it could be traced over the radius to the bend of the arm, whence three red stripes had extended up to the axilla.

Dr EPPS finding that no time should be lost, applied a blister of a length sufficient *to extend from the axilla down the arm to the last phalanx of the thumb.* It was applied the second day, and in the evening was in full activity. It was allowed to remain on till the following morning; several large blisters were formed, and a considerable quantity of a yellowish serum was poured out. The blistered surface being dressed with ung. cetacei, the arm was supported in a sling. The peculiar sensation up the arm was gone, but the thumb remained stiff and puffed. On Saturday, having examined the thumb more minutely, a pimple was seen on the part where the original scratch was situated, and a circumscribed redness and tenderness around the same. Dr E. cut open the skin all around, and then applied an ointment composed of equal parts of yellow resin and spermaceti. On Monday, the thumb being still swelled, a poultice was applied and continued until Tuesday morning, by which time the thumb was reduced to its natural size. Adhesive strips were finally used, and the whole was speedily well.

The hand swelled considerably after the blister was removed, but this depended upon the position of the arm.

27. *Epidemic Dysentery at Edinburgh.*—In the Edinburgh Medical and Surgical Journal for January, we read a brief but very pertinent account of dysentery as it prevailed in Edinburgh in the summer and autumn of the last year. The author, Dr CHRISTISON, describes the organic changes during the march of the disease in those cases of fatal termination, as follows. "The appearances found on dissection were the various stages in the effects of inflammation on the mucous membrane of the rectum, colon, and sometimes too of the lower part of the ileum. In the acute cases, which terminated fatally, so early as the tenth or eleventh day, the most extensive derangements of structure were remarked; in the more lingering cases, which after the first eight or ten days assumed the external character of chronic diarrhœa, and proved fatal in four, six, or eight weeks, the disorganization was in general less extensive. The appearances observed were redness of the inner membrane, thickly scattered ulcerations, most abundant over the longitudinal bands of the colon, commonly occupying and destroying the rugæ, seldom penetrating beyond the

inner surface of the muscular coat, frequently stripping that membrane of large patches of its mucous coat, frequently also covered by shreds of lymph, and sometimes by red, spongy, fungoid granulations. Even in the most acute cases, although no scybalæ had been discharged during life, the colon was found empty of fæces. The other organs in the belly were not affected; and in particular the liver, which has been supposed by some tropical practitioners to play an important part in the parallel dysentery of hot climates, did not in a single instance deviate from its healthy condition.

In every essential respect the late dysentery of Edinburgh appears to be precisely the same disease as that which prevailed in Dublin in 1818 and 1821, and which Dr CHEYNE has so well described in the third volume of the Dublin Hospital Reports.

"The treatment generally pursued in the wards in the Edinburgh Infirmary, under my own charge, consisted at the commencement in the liberal use of opium, preceded in some instances by the free application of leeches to the lower part of the belly, and frequently accompanied with the application of large blisters, and with the use of the warm bath. If the stage was passed during which feculent matter was discharged, and the evacuations had become muco-sanguinolent or sero-sanguinolent, I usually directed the application of leeches to be immediately followed by doses of pure opium, of such magnitude and frequency as were found necessary to check the unremitting diarrhœa and tormina; and sometimes the desired effect was not procured till the patient was pretty strongly affected by the narcotic action of the drug. In urgent cases, twenty or twenty-four grains in the twenty-four hours were sometimes necessary from the very beginning; in the slighter cases four or six grains were sufficient. When an impression was once made on the discharges it was maintained by doses of two or three grains repeated according to circumstances; and frequently the exhibition of opium by the mouth was conjoined with its employment in the form of a suppository. I never but once found this plan to fail in checking the discharge of blood in twenty-four or forty-eight hours, if the patient was seen within three or four days; but the blood often reappeared abundantly in the stools, if the opium was intermitted on account of its causing too complete constipation. After the hemorrhage was permanently checked, the frequent thin feculent stools continued many days, sometimes many weeks, indicating, it is to be presumed, the existence of ulceration, which consequently must have taken place at a very early period of the disease. The opium, it is worthy of remark, rarely caused sickness or dry tongue. In cases in which the stools continued long thin, and with a tendency to be tinged now and then with blood, an opportunity occurred for trying various remedies which have been supposed to be useful in this stage by accelerating the cicatrization of the ulcers. But I cannot say that any of them appeared to be of use, unless opium was combined with it in such quantities as to be itself a powerful agent. The acetate of lead was perhaps an exception; it certainly rendered the stomach less irritable, in the few cases in which opium alone was rejected by vomiting; and although I had too few opportunities of trying it in idiopathic dysentery, the experience I have had in the Fever Hospital and Infirmary fever wards of its good effects in the chronic dysentery, which is sometimes left after this fever, induces me to think that its alleged virtues in the chronic stage of idiopathic dysentery have not been exaggerated. Neither ipecacuan, nor nitric acid, nor calomel, administered so as to affect the mouth, appeared to me materially useful. I have had but one opportunity of trying the effect of calomel in scruple doses, upon the early stage of the disease. It was given on the fourth day with marked advantage certainly, and was repeated next day with equally good effect. But ulceration had evidently taken place before the patient came under my charge; and although the acute symptoms were checked, yet, as the patient was an emaciated subject, transferred from the surgical wards, with a recently opened, extensive, chronic abscess, he sank under the exhausting purulent discharge from the bowels and abscess together. The only other patients I lost were two in number—one an old man of ninety, who entered the hospital on the eighth day

of his illness, in a state of extreme exhaustion, so that, although the stools were checked, he died two days afterwards; the other, a young woman, who, immediately after coming out of an exhausting and tedious attack of continued fever with marked enteritic symptoms, was seized with dysentery in its worst form, and died on the tenth day, without experiencing any relief from treatment beyond the allaying of pain."

No mention of general bleeding is made by Dr CHRISTISON.

28. *On the Medicinal Uses of the Herb Cherrattah.*—The attention of English practitioners is directed to this herb by Mr BAKER of London. He tells us in the December number of the London Medical and Physical that "it has been held from time immemorial in great estimation by the natives of Bengal and the European residents, especially the medical officers, as a very efficacious deobstruent and stomachic medicine."

We learn from Mr B. "that the effects of the cherrattah are not, like stomachics in general, confined to the stomach, but extended to the abdominal viscera, particularly the liver, which it deterges, or (as Dr CURRIE observes) emulges;" for the fæces during its use are well charged with bile, and the complexion becomes clear.

There are two forms of expression not uncommon in medical writings—one technical, perhaps unavoidably so, the other is mere cant—illusive and unmeaning promises of imaginary effects. Under this latter head we must needs class the terms stomachic, detergent, emulgent, &c.

What is a stomachic? Are not cold and hot water, milk and whey, fresh air and exercise, and frictions—each respectively entitled to this appellation? In the common acceptation of the word a stomachic is a bitter or astringent with some aromatic addition, but which is usually so used and abused as to directly enfeeble the functions of the stomach and digestive apparatus generally. Its effects are chronically what those of vinous and alcoholic potations are in a more acute and violent form. The history of the Portland powder will with slight modifications represent that of most of the bitter and astringent preparations employed in the treatment of dyspepsia, and its kindred affections hypochondriasis and gout.

It is not so much new remedies which we want as sounder principles to guide us in the employment of those already in common use: and we should be tempted, at the hazard of being called paradoxical, to express as our belief that physicians could do more good in the treatment of disease, by their being restricted to a few remedies of acknowledged power, and compelled to nicely weigh and balance the precise indications to be fulfilled, than by wandering over the catalogue of a thousand drugs, and trying each in succession with a faint hope founded on traditional evidence of its being successful.

Mr BAKER (to whom we of course mean no offence by these remarks) says that "the medicinal virtues of the herb are imparted to boiling water, and the infusion, when properly made, is a very grateful bitter; but the natives prefer the decoction made by boiling half an ounce of the cut dried herb in a pint of water for about fifteen or twenty minutes. Of this decoction they take a small wine-glassful two or three times a day. The extract, which also contains the virtues of the herb in great perfection, is taken in the form of pills.

In scrofula Mr B. has frequently witnessed its salutary operation. He does not acquaint us with the botanical characters and habits of the cherrattah.

29. *Nitrate of Silver used in the Treatment of Small Pox, and Pustulous and Vesicular Eruptions.*—The method of treating small pox, says a correspondent (in Paris) of the London Medical and Physical, immediately on their appearance, by touching their bases with a strong solution of nitrate of silver, maintains its reputation. Numerous cases of zona, successfully treated in the same manner, have been published. A female thus cured was exhibited in the amphitheatre at la Pitié. In several cases attended with great constitutional disturbance, gastric irritation, pains, vomiting and shivering, followed by heat of the

skin, the local symptoms alone were attended to: they were immediately arrested, and the constitutional affection also ceased.

The same effect was perceived in one of the most fatal epidemics of confluent small pox that ever prevailed in the French metropolis. Previously to the use of the nitrate of silver the patients were carried off by cerebral and intestinal inflammation. In those cases where the pustules were treated by the caustic the constitutional symptoms abated with the local irritation, and the mortality was averted.

A case at the Val de Grace is thus described by M. Broussais: "An extensive and painful zona, accompanied by fever, headache, and redness of the tongue, disappeared in a few days by cauterization with nitrate of silver. The fever ceased on the first application; a certain proof that the visceral irritation was subordinate to that of the skin."

We are not aware of its having been used in pemphigus: it is deserving trial. The only distinctions by the French pathologists between zona and pemphigus are found on the form of the former: pemphigus is called *dartre phlyctenoide*; zona, *dartre phlyctenoide en zone*.

30. *Opium in Delirium Tremens.*—Mr Smith (London Medical and Physical Journal) concludes the history of two cases of this disease successfully treated by the exhibition of opium, by some questions—among others, "What is the best form of giving opium: whether in the way of tincture, the gum, or liq. opii sedativus? and what is the result of experience with respect to the exhibition of suppositories? He cites as the opinion of Dupuytren, that a small quantity of opium administered per anum is generally more powerful in its effects over the system than the same or even a larger quantity given by the stomach. M. D.'s reasons are that the opium undergoes no change in the rectum as to its actual composition, whereas, in the stomach, it is very soon altered, to a certain degree, by the gastric juice and the other substances contained therein.

31. *Angina Maligna treated by Nitrate of Silver.*—Dr Guimier, availing of the experience of an English physician in the use of nitrate of silver, had recourse to it in thirty patients labouring under epidemic angina. Bleeding, general and local, vomiting, cauterization with hydrochloric acid, and various resolvents had been found wholly inefficacious. The tonsils, uvula and pharynx were covered with membranous concretions of a grey, white, or yellow colour: these were thick and adherent, extending into the air passages, the larynx and trachea. The symptoms were croup and angina conjoined in what is called by the French *dipherite*. The respiration was impeded and hissing, accompanied with hoarse dry cough. Death, in those who sunk under the disease prior to the employment of the nitrate of silver, was caused by suffocation. The thirty patients to whose tonsils, uvula and pharynx the nitrate of silver was applied merely complained of its bitterness. The eschar in these cases is limited to the surface, whilst after the use of the hydrochloric acid it spreads to the continuous parts, and its extent cannot be easily measured. Generally speaking the remedy is unsuccessful when the disease has extended to the air passages.

32. *White Swellings cured by Iodine.*—This medicine is becoming more and more celebrated in scrofulous tumours of every kind, including those of the joints. The best means of using it is by friction with the ointment of the salt, or of the iodine itself. The tincture has been advantageously used in the same way.

33. *Mode of Exhibition for Balsam Copaiba.*—The following formula is given by a correspondent in the Lond. Med. & Surg. Journ. for January.

R. Bals. Copaibæ f. ʒij.
Pulv. Acaciæ ʒij.
Sacchari ʒiij.

Liq. Potassæ f.℥iss.
Spir. Myristicæ f.℥j.
Aquæ f.℥vi.

Fiat mistura. Dose, two table spoonfuls three times a day. As this mixture is apt to leave a caustic taste behind it, the patient should wash his mouth and fauces with some mild diluent.

34. *Case of Neuralgia.* Dr WILSON, author of a work on West India fevers, has described in a letter to Dr JOHNSON of the Medico-Chirurgical, the following practice as attended with a complete and permanent cure in three cases of neuralgic disease.

"A pill containing from two to four grains of calomel, and one or two grains of opium, was given each night at bed time, and, next morning, one or two drachms of oil of turpentine, mixed with a little honey."

35. *Means calculated to prevent the Absorption of Virus.*—M. PRAVAS proposes the following: 1. To rub in a vacuum the poisoned wounds, and to direct on their surface a current of a liquid fit to cleanse them. 2. To apply on the points touched by the poison, galvanism by means of two conductors of platinum brought as close together as possible, and introduced into a cupping glass, when the application of this latter is possible. 3. To cauterise immediately in the vacuum with the nitrate of silver or muriate of antimony.

36. *Spontaneous Salivation treated by the Mastication of Cinnamon.*—M. BAYLE, in the *Revue Medicale* for October last, gives two cases: one coming under his own observation, the other taken from SOUQUET, of protracted spontaneous salivation.

The first was of a celebrated literary gentleman, M. X. of a robust constitution and sanguine temperament, who never had the venereal disease nor used mercury. In 1825 he contracted a mild gonorrhœa, which disappeared in a few days under the use of diluent drinks, and some emollient and mucilaginous applications to the affected part.

On the very day in which this gonorrhœa appeared, there came on a most copious salivation, to the extent of three pints daily. The parotid submaxillary and sublingual glands were not, however, either swelled or painful; the saliva was not altered and all parts of the mouth were quite healthy. Several physicians were consulted by the patient, who, though in other respects enjoying good health, became feeble and pale by so profuse a secretion. He made use in succession of rattany, tannin, pomegranate bark, powder of roses, bistort root, rind of walnuts, acetate of lead, and Peruvian bark; but the ptyalism was augmented in place of being diminished by these means. Purging during a month produced no effect.

In July 1826, a year after the attack, the quantity of saliva discharged being always the same, M. X. had recourse to the mastication of cinnamon of Ceylon, a practice indicated by SOUQUET in the *Journal de Medecine*, (t. 22). From the very day of using it the discharge was reduced to two or three glasses per diem; but the persevering continuance of it and increase in its quantity was not sufficient to entirely arrest the salivation which eventually, towards the beginning of autumn, increased to more than double the quantity just stated, that is, to four or five glasses in the day.

M. X. suspended for a year the use of the cinnamon, without the salivary secretion being sensibly diminished or increased. He observed henceforward that food and drink had a great influence over this discharge, which was augmented by some of them, such as beef and mutton, venison, oysters, ices, iced drinks, angelica, oranges, lemonade, and all acids, mint, orange flower, coffee, salad, potatoes, liqueurs, strong wines, and especially those of Mâcon, Nuits and Beaume, &c. On the other hand, the following articles had a contrary effect:

milk, gruel, chicken, veal, spinach, cauliflower, light drinks, water and old Bordeaux wine.

In July 1828, after a year's omission of the cinnamon, the patient resumed its use but without any good effect, no more than from the balsams of Tolu and Peru. He used the cashew nut, which only augmented the ptyalism and caused pain of the head and oppression.

At this present time (October 4), M. X. is in the following condition. The quantity of saliva discharged, is from one to two glasses per diem; being a little increased since the weather has become cooler and moist. The patient has observed ever since the beginning of his disorder, that the secretion is most abundant in the morning when he awakes; it ceases after he has taken a piece of sugar or of bread, and is almost nothing during the two or three first hours which follow the meal; but is renewed when the stomach is in need of aliment. As he rarely experiences the sensation of hunger, he is warned of the necessity of eating by the augmentation in the quantity of the saliva. This secretion undergoes changes not only in quantity but quality, according to the drinks which he uses. Thus it preserves its natural characters when he drinks Bordeaux wine and water, whilst the more alcoholized wines render it viscous and brownish.

M. X. in other respects enjoys excellent health; for the paleness and weakness which had supervened at the epoch in which the salivary flux was very abundant, disappeared when it was in a great measure suppressed by the mastication of cinnamon.

Encouraged by the observations of MM. GUNELLE, GOEDEN, HENRI, RICHOUD and SABLAIROLES, going to prove the efficacy of iodine in chronic fluxes, the reporter of this case, M. BAYLE, has advised M. X. to make use of frictions of ointment of the hydriodate of potass under the jaw, in the arm pits and groins. M. BAYLE promises to make the result public after a few months trial of this practice.

The account of the second case is taken from SOUQUET. It was of spontaneous salivation of five pounds daily for nine years and a half, and a tertian fever with extreme debility, for ten months prior to the physician's taking charge of the patient. The fever was cured by a confection of bark, gentian root, and flowers of centaury, equal parts, and the salivation was arrested by the mastication of cinnamon. The directions given to the patient by SOUQUET were, to chew well the cinnamon bark, to extract all its juices, to swallow them, spitting out only the insipid ligneous portion. This advice was adhered to for five or six months with the effect of entirely removing the disorder. Light and nourishing food was given from the beginning to restore the exhausted strength of this individual, who had been reduced to a most deplorable state of exhaustion.

37. *Hydrocyanate* (*Prussiate*) *of Iron as a Substitute for the Salts of Quinia* (HUFELAND's Journal).—In the spring of 1827, intermitting fevers became very common in Gustrow and other cities of Mecklenburg. The most common type was the tertian, which though for the most part regular, was sometimes singularly marked. Dr HASSE of Gustrow notices three cases of a rare variety of tertian fever. Besides slight chills and general uneasiness, the patients were seized with violent pains in one or other leg, chiefly in the muscles of the calf, whence they extended to above the knee. These pains disappeared in the course of eight to twelve hours; but they always left behind them a weakness and an inability to put the foot of the affected side to the ground, until a new paroxysm returned. In the beginning the fit came on several times at nearly the same hour, and afterwards anticipated the regular epoch by one or two hours. The existence of a masked tertian fever could only be suspected by the periodicity of the pains and a slight brick dust sediment after their cessation.

With some exceptions all these fevers yielded readily to the use of the sulphate of quinia; but as this salutary medicine could not, on accouut of its high price, be administered to every body, Dr HASSE made successful trials of the hydrocyanate of iron or Prussian blue. When symptoms of gastric distress were present which was frequently the case, he directed on the first appearance of

the approaching paroxysm, five grains of ipecacuanha taken every ten minutes, until vomiting was produced; or according to circumstances, he gave a laxative in the apyrexia.

The hydrocyanate or prussiate was administered as follows:—R. Prussian blue gr. xii. to ℈i.; aromatic powder, or white pepper, or mustard powder, ℥ss. Mix and divide into twelve papers. One of these is to be taken every four hours during the apyrexia. The patient, of course, took in all from four to six papers during the apyrexia. In general the paroxysm following the administration of the febrifuge was so mild, that three doses were sufficient in the second and third intervals to prevent entirely the coming on of the third paroxysm. As a matter of precaution only, the patient took two doses on the seventh, fourteenth, and twenty-first day, and the fever entirely disappeared.

The hydrocyanate of iron, administered as above indicated, never produced any bad effects, either on the digestive canal or the encephalon.

The success attending the prescription cannot be attributed to the pepper which enters into its composition, since this article had been taken largely, without effect, by the patients, who were subsequently cured by the hydrocyanate.

For further information on the efficacy of this salt in intermittent fevers, our readers are referred to the papers of Drs ZOLLICKOFFER, of Maryland, and JACKSON, of Northumberland county, Pennsylvania.

38. *Nitro-Muriatic Pediluvia.*—In HECKER's Annalen for May, 1828, there is an account of the employment, by Professor ITH, of Berne, of a pediluvium, consisting of a high vessel of water, in which are poured a tablespoonful of hydrochloric (muriatic) acid, and one of nitric acid. The patient immerses his lower limbs up to his knees in this bath, and repeats it every evening for six or eight evenings. The results, as detailed by Dr ITH, are the following: 1. The cure of a great number of intense cephalalgias, arising from causes the most various, such as a fall on the occiput, obstinate constipation, and other affections of the digestive canal. In all such patients, with the exception of one of a very plethoric habit, the headaches which had been in vain combated by other remedies, promptly yielded to the application of the pediluvia. 2. In one case, after every pediluvium, there were borborygmi, colics, and abundant fecal discharges; in other instances there only supervened softer, and rather more copious stools than common. 3. A complete and radical cure was produced by eight of these pediluvia in a case of hypochondriasis, carried to monomania, and even in one of cephalalgia, threatening to terminate in phrenitis, and under the influence of which there was developed in a short time, on the forehead, a kind of tophus. Frequent and copious alvine evacuations, procured by medicine, had failed to give relief. 4. The last patient not only experienced the above mentioned effects in the abdominal viscera, but he experienced also, during the use of the pediluvia, an acidulous taste in the mouth. 5. In a case of want of appetite of long standing, accompanied by headache and constipation, the appetite was promptly re-established, even before the pains of the head had disappeared. 6. The local effects of these pediluvia only consisted in a slight redness and tumefaction. In one case the swelling lasted for several months, but at last disappeared spontaneously.

39. *Root of the Selinum Palustre as a Cure for Epilepsy.*—Drs SCHMUTZIGER, ARMINAN, and JOHN, of Switzerland, have published cases of epilepsy treated successfully by this remedy. The dose is from ten to twenty grains, according to the age of the patient, repeated every five hours, and after a time gradually augmented. The period of treatment varies from six weeks to three months. Dr SCHMUTZIGER forbids the employment of the selinum when there exist obstructions in any abdominal viscus, or when the genital apparatus is in a state of exalted sensibility; and, according to Dr JOHN, this medicine augments the violence of the disease in those persons where the sanguiferous and nervous systems are very irritable.

Several children, at Geneva, from the age of twelve to eighteen months, who

had been sufferers from convulsions, during the process of dentition, experienced almost immediately the good effects of this substance, administered four times a-day, in doses of two grains.

M. PESCHIER, a druggist of Geneva, has analyzed both the *selinum palustre* and *selinum sylvestre*. Their composition is alike, both containing volatile and fixed oil, soluble in ether and alcohol at 34°, a gummy principle, a yellow colouring matter, a muco-saccharine principle, containing azote, a peculiar acid, phosphate of lime and ligneous matter. It would seem that the anti-epileptic property of these roots resides in the oleaginous and saccharine principles.

40. *On the Effects of Blood-letting.*—Dr LOUIS, in the *Archives Générales* for November, concludes a critical inquiry on this subject, especially directed to three diseases, viz. peripneumony, erysipelas of the face, and angina gutturalis by the following remarks:

"It results from the facts exhibited in this article, that bleeding had very little influence on the progress of peripneumony, erysipelas of the face, and guttural angina, in the patients presented to my notice; that its influence was not more marked in the cases in which it was copious and repeated, than in those where it was moderate; that we do not strangle inflammations, as we are often pleased to say, and that in cases where this seemed to be the case, it is probably because there has been an error in the diagnosis, or because the sanguineous emission was practised at an advanced stage of the disease, when it was near its decline; that it would be proper, nevertheless, to make trial in those inflammatory diseases in which the danger is imminent, such, for example, as peripneumony, of a first bleeding carried to syncope; that, finally, in the cases in which I was enabled to compare the effect of bleeding with the lancet with that performed with leeches, the superiority of the former of these methods seemed to me fully proved.

"I would add, that, in despite of their limited usefulness, sanguineous emissions cannot be neglected in alarming inflammatory affections, the seat of which is in some important organ, both on account of their influence over the diseased organ, and because, by abridging the duration of the disease, they diminish the chance of secondary lesions, by which the danger from the former is greatly increased; that as inflammatory diseases cannot be strangled, we must not multiply bleedings with the view of attaining this imaginary end, nor must we, besides, forget that a certain degree of power is necessary to the resolution of inflammation, since it is so much the more alarming and dangerous in proportion to the weakness of the patient, which weakness favours the development of secondary diseases; finally, the utility of general blood-letting being better proved in my observations than local bleeding, the lancet seems to me preferable to leeches in the diseases under consideration."

We give the above opinions of Dr LOUIS rather for a subject of meditation and inquiry to our readers, than with the belief of their entire conclusiveness as matters fully demonstrated. A larger field, and greater body of facts are required than Dr L. has exhibited, before we can pronounce magisterially on such important questions. We should be unjust, however, to Dr L., did we not admit the industry and candour by which his paper is characterized.

V. MEDICAL JURISPRUDENCE.

41. *Insurance of Lives. Medical Certificates. Medical Evidence.*—The following case, and the commentaries on it, taken from the London Medico-Chirurgical, will be read with interest both on account of their adaptation to similar institutions in this country and as a caution against similar abuses in them, as well as in granting certificates of bad health or lameness to exempt from militia duty. We were on one occasion rated in no very measured terms for not complying with the request of a man, to certify that he was infirm and in bad

health, in order that he might obtain a license to be a pedlar, when in fact he could not himself tell how or wherein he was unfit for good hard work.

There is a branch of medical jurisprudence which is every day increasing in extent, from the general extent of insurance on lives, and in which, we are sorry to say, the medical character is daily exposed to obloquy, and suspicion of its integrity—not so much, perhaps, from want of principle in individuals, as want of reflection on the duty they are called upon to perform. A policy of insurance cannot be effected without a medical certificate, as to the constitution and state of health of the individual; and the ordinary medical attendant is, of course, referred to by the party proposing to insure. We acknowledge that the physician or surgeon thus appealed to is placed in an awkward situation. If he reveals any defect in the constitution, he risks the rejection of the proposal at the insurance office, and, perhaps, some umbrage on the part of his former patient;—but if, on the other hand, he conceals any flaw in the said life, he not only deviates from the right line of moral rectitude, and thus exposes himself to the loss of character for veracity—but he exposes the surviving family of the party insured to disastrous law-suits, and forfeiture of the policy! All concealments of disorders or tendencies to disease—all misrepresentations of sound constitution, vitiate the policy, according to law and justice, and shake the foundations of those reciprocal advantages which the insuring and insured parties confer and receive. We have daily opportunities of witnessing the unenvied situation in which medical men place themselves by inconsiderate (to give it the mildest term) attestations of sound health, when a minute's examination detects an unsound constitution—too often, actual disease of some important organ! These instances of loose and improper certificates from medical men are now hourly coming before whole companies of respectable and influential members of society, who must and do form, in consequence, a low estimate of the medical character, thus injuring the whole profession. The evil is still farther increased by the litigations which naturally ensue, as effects of these unjustifiable certificates, and the wide range which the exposure of the medical character takes through the medium of the press. We need only refer to a recent trial between Baron Von Lindenau and the Atlas Insurance Company, where a system of medical misrepresentation came out that is quite sickening to peruse. The late Duke of Saxe Gotha was insured in the above office, for three or four thousand pounds, in the year 1824, on the faith of medical attestations, though it turned out, that the Duke was even then reduced to a state of idiocy, mutism, and cecity, by an organic disease—a large tumour in the skull, pressing on the brain! Yet the Duke's physicians, Drs Worl and Zeigler (shame on such physicians!) certified that they had known the Duke for many years—that his general health was good—that he was merely "*hindered* in the faculty of speech"—and had an affection of the left eye! The evidence of the Duke's physicians and servants went to matters of fact—and we have no hesitation in saying that these facts were concealed or misrepresented. The evidence of Mr Green touched matters of opinion—and these matters of opinion we shall quote.

"*Mr* Green *examined.*—I am a surgeon in London, and lecturer at St Thomas's Hospital. I have attended to the evidence concerning the Duke's health. I am of opinion that the tumour in the skull must, during life, have been in a passive state—I think, from the appearance of the skull, that it must have been formed in very early life. Little change could have taken place after ossification, and the base of the skull is one of the parts earliest ossified. It is the nature of organic conformations like that to produce ailments which continue to increase. When such tumours exist in a state that may be termed morbid the ailments increase. Supposing the dissection had not taken place, and knowing only what I have heard to-day of the Duke's health before he went to Italy, I should say there was no symptom of organic disease. The spasms which followed the tertian fever, and even spasms more violent, might have arisen from causes quite unconnected with the brain. The attacks, gradually diminishing and ultimately ceasing, would confirm me in my opinion that they did not proceed from the brain. From the cure of the derangement of his digestive organs

at the baths of Marienbad, I should still conclude that the brain was healthy. After the dissection, supposing a knowledge of the tumours discovered in the brain, knowing the whole course of his illness, and taking into account the care taken of the Duke, I should say, that the probability before his death was that he would have lived five years longer. With respect to what has been said of the Duke's difficulty of speech, I hardly know what cause to ascribe it to, from the imperfect manner in which it has been described; but I think it was in the mind rather than in the tongue. I am inclined to ascribe it to a want of volition. I do not think that it is to be ascribed to the tumours in the brain. I should not consider that the catarrhal attacks he had passed through would render it less probable that he would live. I have heard the state of the Duke's mind described; but do not think it amounts to idiocy, imbecility or derangement—quite the reverse.

"*Cross-examined by Sir J. Searlett.*—Do you not consider vigour of mind to be the reverse of imbecility, and intelligence of idiocy?——Yes.

"Then you consider the evidence adduced in this case as showing Duke Frederick to have possessed an intelligent and vigorous mind!—I have not said so.

"No, but you say his state was the reverse of imbecile and idiotic; and you allow that vigour of mind and intelligence constitute the reverse of these conditions. When you hear the Duke was 'controlled in his intellect'—that he was watched like a child—that he was so lethargic that he did not move unless desired to do so, and that he, a prince, suffered himself, at his parties, to be turned round and round for the amusement of his guests—do you, I ask, consider these facts as evincing a vigorous intellect?——I have heard the evidence imperfectly if all these things appear. I heard that he had perception, memory, and other mental qualities; that he was fond of music and of hearing reading.

"Do you think that the symptoms pointed out the existence of disease in the brain?——I do not think so.

"If a patient had had occasional attacks of spasm—if he had been unable to speak for two years—if he had been so indolent as never to move about except when asked to do so—if he was imbecile in his mind—and if, after he became speechless, he was in the habit of frequently putting his hand to his forehead—would you regard these circumstances as indicating any disease of the head?——These symptoms would lead to a *suspicion* of disease there.

"If the patient had an attack, with redness about the face—became affected with paralysis, and died; and if, on opening the head, you found a tumour of the brain, and ten ounces of water effused, would these appearances confirm you in your suspicion, and prove that it had been well founded.——I cannot give a direct answer to that question? Pressure on the brain, causing loss of speech, would also have produced other symptoms.

"But suppose a case such as I have described?——It is a case I cannot suppose.

"Might not the copious discharge during the catarrhal fever have relieved the brain?——Possibly it might, but these are cases not frequently falling under my observation.

"Might the sudden suppression of such a discharge have affected the brain?——Perhaps it might, by a kind of metastasis.

"What do you mean by that?——That an effusion of a different fluid might have taken place upon the brain from the suppression of the catarrhal discharge.

"Do you think the effusion found on the brain had taken place gradually or suddenly?——Suddenly.

"*By Lord Tenterden.*—If I, as a medical man, was asked by an insurance company concerning the state of a man's health who was unwilling to move, who was subject to control upon his intellect, and who had lost his speech, I should not consider myself at liberty to forbear mentioning these circumstances.

"*Lord Tenterden.*—Then there is an end of the cause, for that is the state of the duke described by Dr DORL, who signs the certificate sent to the insurance office. "*Plaintiff non-suited.*"

We know not what to say to the foregoing evidence. Heaven forbid that we

should find fault with a man on account of his opinions, merely because those opinions may differ from our own; yet we think there will be but one opinion throughout the profession respecting the majority of Mr GREEN's conclusions, namely, that they were errors. Mr GREEN's statements show, in a clear point of view, the bad effects of directing too exclusively, (as surgeons often do) their talents and attention to operations, anatomy, and purely surgical diseases, to the neglect, comparatively speaking, of internal pathology; or, in plainer language, the nature, effects, and phenomena of diseases. We hope this short article will awaken our professional brethren to the necessity of guarding the character of themselves, and the faculty at large, from the reproaches which are gathering like a cloud, and threatening to cast a shade on their integrity as far as regards the granting of medical certificates for the insurance of lives.

42. *Poisoning by the Butter-milk of a Goat.*—It is stated in RUST's Magazine of the Medical Sciences, No. 1, for 1828, that in Herford, Westphalia, a woman and her five children, from two to thirteen years old, were, on the 12th of May 1827, poisoned by partaking of some goat's butter milk, which had been sent to them for food by a charitable neighbour. In about fifteen minutes after taking the milk they were all attacked with a violent puking; their eye-lids were half closed; the pupils dilated; pulse small, hard, and slow; epigastrium tumid; the abdomen contracted; no purging. Lukewarm water was given to increase the vomiting, after which two ounces of medicated soap, dissolved in water, one pint, with the addition of one ounce of almond syrup was directed; the bodies of the patients being washed with vinegar and spirits. In ten hours they were all recovered. Upon a minute analysis of the milk no mineral substance was found to be contained in it; Dr BONORDEN conceived therefore, that the animal from whom it had been taken had eaten in its fodder some narcotic herb, perhaps the *aethusa cynapium*, the poisonous properties of which had been communicated to the milk.

VI. SURGERY.

43. *Strangulated Hernia.*—Dr EHERMANN of Strasbourgh details the case of a man, forty-seven years of age, who, without apparent cause, suffered suddenly from the symptoms of strangulated hernia. On examination, a hernial tumour was discovered, tense and painful; but as two fingers could be passed into the external abdominal ring, and as a portion of the tumour could be felt behind it, it was manifest that the stricture could not exist at the external ring. At the end of the third day the operation was resorted to. An incision three inches long, exposed the tendon of the external oblique an inch above the ring, the sac was opened, from which escaped a bloody serum, and a fold of intestine of a livid colour and inflamed; the finger was then passed to the stricture, and this was divided by means of COOPER's blunt pointed bistoury, upwards and outwards, so that the finger immediately slipped into the abdominal cavity, and the intestine was easily produced. In less than a month the patient was discharged perfectly cured, wearing as a preventive an elastic truss.—*Jour. des Progres, &c. Vol. XI.*—This is an example of the stricture being seated at the *internal ring*, which does not frequently occur.

44. *Laceration of the Thumb.*—Isidore Chapron, while fixing a rope to a wheel turning with great velocity by a steam engine, had his thumb caught in a fold of the rope. In an instant the first phalanx was torn off with so little pain that he was hardly conscious he was injured. The division of the skin was as smooth as if it had been made by a cutting instrument; there was no hemorrhage, and very little pain. But what was most curious, the phalanx which was torn off presented the whole length of the two tendons, the flexor and extensor, inserted into the first bone of the thumb. These tendons, with short

shreds of muscular fibres at their upper fourth part, were eight to nine inches long, and had evidently been torn from the muscles at their points of origin on the fore arm. The patient was bled, and dieted for a few days. No bad consequences followed: there was no fever; very little swelling or suppuration; the bony extremity granulated without exfoliation. On the 20th day the patient left the hospital of Saint Lewis, and in fifteen days afterwards the cicatrix was complete and firm.—*Jour. des Progres, &c. Vol. XI.*

45. *Gangrene of a Crural Hernia.*—M. CAFFORT, surgeon of the Hotel Dieu at Narbonne, reports the case of a gardener, aged twenty-eight years, who was for three years the subject of an irreducible crural hernia. This became strangulated, but the surgeon in attendance treated him for gastro-enteritis by applying leeches to his epigastric. At the expiration of two days the true complaint was recognised, and another surgeon was consulted, who, finding the tumour gangrenous, declined any operation, and left the disease to nature. The patient was then conveyed to the hospital, on the eleventh day of the strangulation. He was discharged well in six weeks after the tumour had been opened, and a gangrenous portion of the omentum, four inches in length, had been removed.—*Nouv. Biblioth. Octob.* 1828.

46. *Aneurism of the Carotid cured by* VALSALVA'S *method.*—An aneurism of the left carotid artery, about the size of a hen's egg, and extending from the thyroid gland even to the clavicle, was cured by the continued use (from the autumn of 1820 to the spring of 1822) of a severe regimen, consisting of light boiled meats, bread, vegetables, and acidulated drinks, by rest, repeated bleedings, the internal use of digitalis purpurea, of the water of the laurus cerasus, and by the application of pounded ice. The patient could not endure compression of the tumour: he occasionally suffered from anginose affections, and from a difficulty of swallowing. It was in June 1826, more than two years, that he enjoyed perfect health.—*Rev. Med. for Octob.* 1828 *from* HECKER'S *Annalen.*

47. *Fungus Hæmatodes, cured by Alum and the Red Oxide of Mercury.*—In GRAEFE'S Journal, Vol. XI. an interesting case is related of which the following is a summary. Madame Brick, aged twenty-six years, who had been in her youth the subject of scrofulous swellings, but who, of late years, enjoyed good health, consulted Dr SCHUTTE in 1820, for a tumour on the left cheek, immediately before the ear. It was then of the size of a nut, and although moveable, yet adherent by some filaments to the skin. Some of the small vessels were dilated, and there were several eminences, like warts on the tumour itself. It was supposed to be caused by a blow received some weeks previously. The patient was again seen in January 1823, when the tumour was of the size of the fist, moveable at its base, but adherent to the skin, which was of a bluish colour, and marked by dilated veins. The tumour was indolent, it had little hardness, but more elasticity, as if it contained pus. On the 21st of April the patient observing a soft spot on the tumour, punctured it with a needle, but was surprised by a violent hemorrhage, which could only be arrested by great pressure. In two days after another bleeding occurred, which endangered life; two pints of blood were lost, and the opening into the tumour was greatly enlarged. Danger was for the time avoided by means of a tight bandage with a compress of lint, of colophony and gum arabic. On the 26th of April, the wound was found much enlarged, a new hemorrhage occurred which was arrested by the same means. On repeating the dressing on the 29th, the hemorrhage was more violent than ever, and the wound two inches and a half in diameter. The gum arabic and the colophony were now omitted for calcined alum in powder. May 1st. A little blood appeared on the removal of the dressing, which issued from innumerable small orifices from the whole exposed surface. The internal surface resembled a fine sponge, and had a whitish colour, here and there reddish. The same state existed on the fourth of May; a sixth part of the

red oxide of mercury was added to the alum. The part was daily dressed, increasing at each time the proportion of the oxide; and under the influence of this treatment, the morbid mass sensibly diminished. When the superior portion of the fungus was removed, which only occurred in November 1823, there was observed at the bottom of the wound a compact substance resembling perfectly by its colour and consistence the medullary substance of the brain. Blood oozed also from this surface, but not so freely as from the tumour. This encephaloid tumour gradually yielded under the influence of the burnt alum and red precipitate in equal parts. By the 5th of April 1824, the cure was complete. Bark and other bitters were administered internally during the whole of the treatment.—*Revue Medicale, Oct.* 1828.

48. *Laryngotomy.*—A man, aged twenty-five years, was irritating his nostril with a needle, when by some accident he suffered it to enter the nostril through which it passed and fell into the pharynx. The needle was armed with a large thread, which disappeared entirely. Much irritation and cough were excited, by which the thread of the needle was thrown out. The patient endeavoured by means of the thread to extract the needle, but in vain. The respiration and voice becoming affected; and renewed attempts at extraction failing, the patient entered the hospital Beaujon, on the 18th of June 1828. The symptoms of inflammation, swelling, &c. in the pharynx and larynx were now considerable; the voice was nearly lost, spasmodic contractions of the muscles of the neck were excited, and the soft parts in front of the trachea were much swollen. The house student having in vain endeavoured to extract the needle by means of the thread, sent for the surgeon, M. Blandin. The thread had now re-entered the pharynx, and all researches by means of the finger and forceps would not enable him to determine where the needle was fixed, whether in the larynx or pharynx. As the difficulty of respiration was still supportable, no operation was undertaken, but antiphlogistics, general and local, were employed with some advantage. On the evening of the 21st the thread was again ejected, by means of which M. Blandin discovered that the needle had entered the superior aperture of the larynx on the left of the epiglottis. On the 22d the operation of laryngotomy was performed, by making a cautious dissection through the indurated and swollen parts, in front of the larynx, then carefully puncturing the crico-thyroid membrane, and afterwards dividing, by means of a director and bistoury, the thyroid cartilage, through its whole length on the median line. The respiration was now much relieved, and an attempt was made to discover and remove the needle by means of the forceps; but the irritation excited was so great as to induce the operator to desist. The wound was lightly dressed by means of a perforated compress covered with simple cerate, and the patient removed to bed. The night was passed comfortably, and the next day the needle, of a black or bronzed colour, and nineteen lines in length, was found fixed in the compress covering the wound.

The wound gradually healed, so that by the beginning of September merely a small fistula remained, but the voice was hoarse; there was some pain at the larynx, and other indications of chronic inflammation, for which leeches, a seton, &c., were prescribed with little advantage. The treatment was however continued, caustic was applied to the fistula, so that by the 30th of September the sinus was closed, and the voice acquired more force.—*Rev. Medicale, Octob.* 1828.

49. *Amputation of the Neck of the Uterus.*—M. Lisfranc announced to the Academy of Surgery, on the 11th of September, that the females lately operated on, and who had been reported to the Academy, had recovered with the exception of one patient, who died of peritonitis, an accident which he had not before met with after this operation. He recapitulated the number of his operations; they amounted to forty-three, of which he had lost but four.—*Rev. Medical. Octob.* 1828.

50. *Wound of the Heart.*—Dr Leonard Randall of Tennessee relates the case of a negro boy, shot in the breast with a common fowling piece, loaded with shot, who lived for two months and six days after the accident. On dissection it was found that the right lung was nearly destroyed, the left lung was much inflamed, and several shot were found in its substance, the pericardium was partially adherent and part was absorbed, while the heart was enlarged, partially adherent to the pericardium, and its parietes indurated. On opening the right ventricle, *three shot were found loose in its cavity.* This ventricle was greatly enlarged, and lined with a thick coat, from which there projected numerous papillæ of a dun colour, giving it the appearance of the upper surface of the tongue of an ox. Two shot were also found in the right auricle, but the internal surface was not much injured by their presence.—*Western Jour. of Med. & Phys. Sci. Oct.* 1828.

51. *Mode of arresting Hemorrhage from Leech Bites.*—Dr Ridolfo has communicated to the Medical Society of Livourne, a new method of arresting the bleeding from leech bites. In this country, difficulty has occasionally occurred, but in Europe cases are said to occur daily, in which cold water, the application of flour to facilitate the formation of a coagulum, caustic, as the nitrate of silver, calcined alum, &c. are often inefficient, and even compression in various ways will not always answer. Dr Ridolfo affirms that he has always succeeded by applying a cupping glass on the point from which the blood escapes; a very small glass being used where the bleeding is from a single bite, and a larger one when it issues from several placed near each other. Almost immediately on the application of the glass, the blood forms a clot over the bite, which suspends the hemorrhage. The glass is allowed to remain on a few minutes until the integuments become tumefied. Care should be taken in removing the cup, not to disturb the coagulum; the fluid part of the blood should alone be emptied, and the glass reapplied again and again until the hemorrhage has completely ceased.—*London Med. and Surg. Jour. Jan.* 1829.

52. *Obturateurs, or Artificial Palates.*—Mr James Snell, surgeon dentist of London, has published a work on the use and construction of obturateurs, with cases illustrating his improvements, and also numerous cases of deficiency of the lower jaw, lips, nose, &c. &c. with the most efficient means of restoring the parts artificially. Mr Snell has exhibited great professional candour as well as ingenuity and science, in publishing minute accounts, by which he has succeeded in relieving the distressing deformities to which he alludes. From a review of his work in the London Med. and Surg. Jour. for Jan. 1829, we will make a few extracts of some of his improvements. In congenital divisions of the palate, suction is often impossible, and a fine born infant pines away, unable to swallow its natural food; or should it survive, the operation of staphyloraphy affords but an uncertain means of relief.

Mr S. observes that "after constructing a variety of instruments, and adopting numerous methods but with little success, I at length found, that all the ends required might be accomplished by a very simple contrivance,—merely that a common heifer's teat should be attached to the usual shield for sucking. On one side of the teat, which is to be the upper side, sew a piece of leather sufficiently large to be introduced into the mouth without difficulty, of a length and shape suited to cover the fissure in the palate. The teat being introduced into the mouth, when the child sucks, the leather will be pressed by the tongue against the roof of the mouth, so that the fissure will be covered, and the milk will flow easily into the pharynx, without passing out at the nose. Some little judgment will of course be requisite in the adaptation of this contrivance, as in some instances very thin Indian-rubber may be used in preference to leather; but this must be left to the discernment of the medical attendant, or to the artist who has to construct the apparatus. By the use of this instrument, many children

that were wasting away from being unable to suck, have been rendered comfortable, and restored to health and strength."

The instrument which he employs when the first teeth are shed, and the second molar teeth are through the gums, to be modified by the circumstances of the case, is thus described.

"My present method of constructing it, is, with a gold plate, accurately fitted to the roof of the mouth, extending backward to the os palati, or extremity of the hard palate,—a part of the plate, about an inch in length, being carried through the fissure. To that part of the plate which answers to the nasal fossæ, are soldered two plates, meeting in the centre, and carried upwards through the fissure to the top of the remaining portion of the vomer, to which it should be exactly adapted, and made to the natural shape of the nasal palatine floor: thus the fluid of the nose will be carried directly backward into the fauces. A piece of prepared elastic gum is next attached to the posterior part of the plate, where the natural soft palate commences, extending downward on each side, as low as the remaining part of the uvula, and grooved at its lateral edges to receive the fissured portions of the velum. A moveable velum is placed in the posterior centre of the elastic gum. That these may partake of the natural movements of the parts during deglutition, a spring is affixed behind them, one end of which is fastened to the posterior and anterior surfaces of the principal plate, and the other end rests gently against the posterior face of the Indian rubber; this keeps it always in close apposition with the edges of the fissure during deglutition."

53. *Strictures of the Urethra.*—The mode of curing strictures of the urethra by confining a *large* bougie (generally of elastic gum) at the anterior part of the obstruction, is still employed with undeviating success in the wards of M. Dupuytren and M. Breschet at the Hôtel Dieu. The mere contact, accurately preserved for eight or ten days, often enables a catheter of the largest size to pass freely where the smallest bougie could not previously penetrate.—*Lond. Med. & Phys. Journ. Jan.* 1829.

54. *Chronic Disease of the Brain relieved by Trephining.*—An interesting case is related by Dr William Judkins of Ohio, in the February number of the Transylvania Journal of Medicine, of a young man 18 years of age, who from his infancy had been delicate, and whose intellect had always been exceedingly feeble and dull. In the summer of 1823, he became slightly deranged, had occasional pain in his head, fever and other symptoms of cephalic disease. He was subjected to a full antiphlogistic course of treatment, followed by the free exhibition of mercury, but with no advantage. He was now in a state of complete insensibility and much emaciated; lay with his eyes wide open: his alvine and urinary discharges were involuntary, and when his limbs were laid in any ordinary position, he would not move them for twelve or sixteen hours together. The operation of trephining was now advised and performed. No sensibility was manifested by the patient. A portion of the parietal bone being removed, the dura mater presented a slight appearance of chronic inflammation, and the brain pulsated slowly and tolerably firmly. No fluid was discharged. The flaps of the scalp were replaced, after removing a corner of one of them in order to keep up a communication with the dura mater. "I saw him," says Dr Judkins, "the next evening, and to my great satisfaction, found that a sanious fluid had escaped from the wound, I might say from the brain, and had run through, not only the pillow under his head, but also *through the bed.* His speech and the exercise of his mental faculties, which had been entirely suspended for the last six or eight weeks, began to return. From this time he slowly recovered, and has entirely regained his health and strength; and what is rather more remarkable, he is much more acute in the exercise of his mental faculties, than he ever was before the operation with the trephine."

55. *Imperforate Anus, and Subsequent Formation of an Alvo-Urinary*

Calculus.—Mr JAMES MILLER reports the case of an infant, born in 1821, without an anus, and whose rectum slightly communicated with the bladder, on whom he operated by means of a scalpel and trocar. The artificial anus executed its functions remarkably well—the sphincter ani performing its usual office; but there was great liability to contraction and obstruction. Hence the operation had to be frequently repeated, ten times before the child was eight months old, and subsequently it was often requisite. About three years ago a large calculus formed in this artificial passage, and from its size could not be extracted entire. It was broken into three pieces by means of a drill, with which it was several times perforated, and of a pair of strong polypus forceps. Each piece had to be again drilled and broken before it could be removed. All the fragments were eventually extracted. The operation lasted for two hours and three quarters. No untoward symptom supervened, and in ten days the boy was running about; the anus having contracted to its usual dimensions, the power of the sphincter being complete and some urine escaping by the anus.—*Ed. Med. and Surg. Journal, Jan.* 1829.

56. *Urinary Calculus of an extraordinary size successfully removed by the High Operation.*—In GRAEFE and WALTHER's Journal, Dr KRIMER has given an account of a stone patient on whom the lateral operation was performed for a calculus in the bladder, but the stone was too large for extraction, and could not be broken. The next day the high operation was executed, and an enormous stone was removed with the fingers. It weighed 23 ounces, (?) measured 3 inches and 8 lines in length, 3 inches and half a line in breadth, and 2 inches and 1 line in thickness, being of the form of a heart. The fourth day after the operation an hiccough came on; it remained for five days, but at last yielded to musk united with quinine. No antiphlogistic measures were employed; but bark, with cardamon and the acid aromatic tincture, were prescribed. A good suppuration was established, and the patient was recovering at the time of the report.—*Bulletin Univers., Sept.* 1828.

57. *Unusual Variety of Aneurism.*—Professor LALLEMAND, of Montpellier, has related a case of aneurism, probably of the vessels of the tibia, of which the following is a summary:—A man, 45 years of age, had a tumour of the right knee; the skin was tense, and of a rose colour; the leg was flexed on the thigh, and emaciated. The knee was a third larger than its fellow, covered with varicose veins, which increased in size when the patient held his breath, or when the limb was depending. The superior extremity of the tibia was double its natural size; two tumours existed on each side of the tendon of the patella, the internal had the form and size of the half of a turkey's egg, and pulsated very distinctly; the external tumour also pulsated, but was smaller, about half the size of a walnut. Pressure on the crural artery arrested the pulsations. On the internal side of the ligament of the patella, there was a point more elevated, and which pulsated more distinctly. By pressing perpendicularly on this point, almost the whole of the first phalanx of the finger could be buried in the swelling, and a circular orifice, five or six lines in diameter, the circumference of which was hard and thin, could be distinctly felt. When the thumb was firmly pressed on this opening, the tumour would readily recede with a crackling noise. A similar noise was produced by compression on the external tumour. Pressure on one tumour rendered the other more prominent, and the pulsations became more superficial. From these circumstances M. LALLEMAND concluded that an aneurismal tumour was developed in the interior of the bone, and that the tendon of the patella divided it into two portions. He, therefore, secured the crural artery on the front of the thigh. In three months the patient could support himself on the leg, and walk without crutches. He eventually completely recovered, experiencing neither pain nor stiffness in the knee.

On the above case M. BRESCHET, in the Repertoire d'Anatomie et de Physiologie Pathologiques, makes several observations, and endeavours to prove by the citation of cases, that, although such cases are rare, yet that there are many re-

corded by distinguished authors, but under improper titles. He concludes "that this disease is doubtless analogous to the *erectile tumours* ('aneurisms by anastomosis,') of the soft parts, and constitutes a true aneurism of the arteries of the cellular tissue of the bones. Injections, indeed, have demonstrated that the vessels of the limb were sound, while the arteries proper to the substance of the bones, (chiefly at the extremities of the long bones, where they are most numerous,) are more dilated than in their natural state, and that they open by numerous orifices into the aneurismal pouch, situated in the centre of the bone. A coagulum forms, occupying the place of the cellular and spongy tissue of the bone, which has been gradually destroyed; or there exist numerous small cavities, each communicating with an arterial branch. The pulsations are dependent on the systole and dyastole of the small arteries, going to the diseased part of the bone. The same phenomenon is observed in the erectile tumours of the lips, of the globe of the eye, of the concha of the ear, &c. A ligature on the main artery arrests these pulsations, and will cure the disease, another proof of the aneurismal character of this kind of tumour."

According to M. BRESCHET, the disease may be confounded with osteo-sarcoma, fungus hæmatodes, inflammation of the proper tissue of the bones, inflammation of the veins of those organs, and, finally, inflammation of the veins which surround the bones, and which cause erosion, caries of these organs, and the formation of fungous tumours of the periosteum.—*Bulletin Universel, Sep.* 1828.

58. *Aneurism of the Arteria Meningea Media.*—In GRAEFE's Journal is recorded a very unusual case of aneurism in a peasant of strong constitution, who, two years previously to his consulting a surgeon, had received a blow on the left temple. A hard, round, and moveable tumour, of the size of a walnut, was gradually formed, accompanied by pain in the head. Dr KRIMER advised the attending surgeon to remove it, on the supposition of its being an encysted tumour. The tumour was found to be covered by the temporal fascia and muscle. On dividing the muscle, the tumour was found attached to the periosteum by a peduncle of the thickness of a quill. The operator, believing this to be merely the root of the tumour, divided it close to the bone; a profuse arterial hemorrhage immediately succeeded, so that a pound and a half of blood was lost before a check to the discharge could be given. The wound was plugged, and pressure employed, but in vain; the patient died in two hours. A proper examination after death was not allowed; Dr KRIMER however broke away portions of the cranium, and found an aneurismal sac, at the union of the temporal and parietal bones, having a direct communication with the middle meningeal artery. This vessel was found to have acquired the thickness of the finger; the pia mater (arachnoid?), covered by an exudation, was strongly adherent to the dura mater; the brain was apparently healthy; an ounce and a half of blood was extravasated in the cranial cavity. The bone surrounding the aperture was pliant, and only a third of a line in thickness.—*London Med. & Surg. Jour. Nov.* 1828.

VII. MIDWIFERY.

59. *Extra-uterine Abdominal Pregnancy.*—A female, 77 years of age, who had been for many years in a state of fatuity, died in the year 1821, at the hospital of Salpétriere. The body was examined, in the presence of M. ESQUIROL, by one of the pupils, who discovered, in the cavity of the pelvis, a body which was easily removed, as it was merely adherent, by some cellular membrane, to the mesentery and a fold of the small intestine. The peritoneum, the uterus, and all the viscera of the abdomen were unaltered from their natural condition. The tumour was easily recognized as a fœtal skeleton; it was about two inches in

length, and divided into two very unequal portions by a kind of neck, the larger part forming the cranium of the fœtus, the smaller the trunk. A minute description of the fœtus is given, to which the curious may refer; we will only mention that the cranium was disproportionately developed, that all its bones could be readily distinguished, although the fontanelles had disappeared, and the sutures were united.

The reporter, M. MITIVIE, considers the case remarkable, not only from the above mentioned circumstances, but also from its being found in a female aged 77 years, without having been apparently injurious. From its presence in the cavity of the peritoneum, he has no doubt that it was the product of *an extra uterine abdominal pregnancy.—Arch. General. Oct.* 1829.

60. *Causes of Puerperal Peritonitis.*—M. DUGES, Professor at Montpellier, has made some observations on the causes of peritonitis among puerperal females. We shall extract some facts from a short analysis of the memoir, in the *Jour. General.* for October, 1828.

Cases of puerperal peritonitis appear at different seasons of the year, and are sufficiently numerous to constitute true epidemics. They are rarely sporadic. They are manifested most frequently in cold and moist weather, and hence generally occur in January and February, in October and November. The disease does not appear in those months where there is dry heat or dry cold. A cold, moist atmosphere is, however, not alone sufficient for the occurrence of puerperal peritonitis; for this, as well as for other epidemics, we must admit *an occult cause*, connected, no doubt, with atmospheric influences; because these influences may exist without any epidemic being the consequence.

Errors in diet operate merely as exciting causes of puerperal peritonitis. This disease is more frequent and severe among females who have suffered from disease during gestation, or who have been exhausted by misery and want.

What connection is there between this inflammation and the suppression of the milk, or of the lochiæ, and how far should it be considered as the result of a metastasis from the mammæ? It results from the facts examined, that ordinarily the suppression of the milk, or the lochiæ, occurs after the invasion of the disease, and consequently is the effect, and not the cause, of the disease. In many cases, also, even of great intensity, there is no suppression of either of these discharges. Of 89 cases, the lochiæ were suppressed at the beginning of the inflammation in 25; at the 10th to the 18th day in 27; and in 37 cases the lochiæ were not suppressed, and have sometimes been augmented. Of 89 cases, there was a suppression of milk before the occurrence of the disease in 20; in 62 the secretion was only during the continuance of the disease; and, finally, in 7 females, the mammary secretion continued in spite of the peritonitis.

In answer to the question, whether primiparous females are more liable to peritonitis than those who have previously borne children, M. DUGES appeals to facts. Of a given number of women with puerperal peritonitis, three-fifths were primiparous.

Of 456 accouchemens, followed by puerperal peritonitis, 6 were cases of twins, and of these 3 of the patients were ill before their confinement.

As to the duration of the labour, it lasted more than eight hours among the greater number of those attacked by peritonitis: and of 456 cases, 9 occurred where the child was born dead, and in a putrescent state, and 32 after the labour was artificially terminated. In the greater number of cases hemorrhage had supervened after parturition. We must regard, therefore, as predisponent causes of peritonitis puerperalis, all the manipulations which become necessary in cases of hemorrhage, and especially the introduction of the hand, injections into the uterus, the use of the tampon, &c.

61. *Cases of Midwifery.*—In a healthy English country town, of 2510 cases of midwifery, there were 4 arm presentations, or 1 in 600; 8 in which turning was required, or 1 in 300; 6 in which the forceps were employed, or 1 in 400; 3 cases of embryotomy, or 1 in 800; 6 cases of puerperal convulsions, or 1 in

400; 2 cases were fatal.—*Med. Gazette. Lond. Med. and Surg. Journal. Jan.* 1829.

62. *Uterine Hemorrhage.*—In the August number of the West. Journal of the Medical and Physical Sciences, Dr DRAKE, the editor, has published some practical remarks on the management of uterine hemorrhage. To these, although not generally novel, some additional attention is demanded, as Dr D. has never been so unfortunate as to lose a patient from uterine bleeding.

I. *Prevention.*—1. Venesection is important as a preventive measure whenever the patient is of a sanguine temperament, and of a full habit: in other cases the lancet is injurious, and may produce abortion. 2. Purging is a prophylactic by diminishing the force of the circulation; and by promoting secretion and the peristaltic motion of the bowels it lessens uterine determination. 3. A most powerful means of prevention is a liberal administration of opium and laudanum, after the bleeding and purging. "The quantity given *should be great enough to exert a crippling influence on the circulatory system.*" 4. A recumbent posture, a hard bed, and warm feet, are all requisite, but should not be relied on. Perfect rest, physical and moral quiet, are essential immediately after delivery.

II. *Suppression.*—1. Venesection is here improper, except in the earliest stages, as the vigour of the circulation is soon reduced by the discharge of blood. 2. *Opium*, however, is adapted to every stage of this profluvium. Large quantities are often required; two or three grains of solid opium, or a large teaspoonful of strong laudanum may be given at a single dose, and repeated once or twice, according to circumstances. Dr D. is not convinced that the addition of the acetate of lead gives any greater efficiency to the opium. 3. The abdominal bandage is exceedingly important; it should be broad and firm, and passed over the iliac, hypogastric and umbilical regions. The compression thus exercised maintains the excitement of the heart and brain, and often prevents syncope: it prevents or restrains hemorrhage: and it facilitates the separation and discharge of the placenta. "To its influence I ascribe the fact, that I have never yet, in my own practice, been obliged to introduce my hand into the uterus for the purpose of separating the placenta from its attachment." 4. Cool air and cold applications are useful, but too much reliance should not be placed on them, especially when the system is much reduced, as then they would be injurious. 5. The tampon will often produce the most salutary effects. Dr D. would recommend it even in hemorrhage, after parturition; for, although an internal hemorrhage might continue, when the external discharge is prevented, yet the presence of the tampon, instead of aggravating the bleeding, would rather facilitate its cure by promoting the formation of coagula. It should, of course, not be solely relied on, but be assisted by all the usual methods for lessening uterine hemorrhage. 6. Internal and external stimuli are of the utmost importance when the powers of the system are exhausted. Dr D. recommends, in very high terms, the external use of mustard, as arresting the declining powers of the system, and restraining the hemorrhage. "I feel quite certain that I have saved the lives of several patients by a resort to sinapisms." They are to be applied to the epigastric, and also to the extremities.

III. *Restoration.*—The recovery after copious uterine hemorrhage is generally tedious, but may often be facilitated by a judicious course of treatment adapted to the varying condition of the patient. Dr D.'s directions are judicious, but perhaps need not now be repeated. He cautions against the abuse of tonics, stimulants, and nourishing diet, and also against officiousness on the part of the physician. "There is a time to withhold medicines as well as a time to give them."

63. *Labour retarded by a preternatural Septum in the Vagina.*—Professor RICHARDSON, of the Transylvania University, relates the case of a female in labour with her third child, in whom delivery was prevented by a preternatural septum in the vagina. After a careful examination, the head was found presenting and pressing against the new membrane, which however yielded very little

to vigorous uterine contractions. A small orifice was eventually discovered in the centre of the septum, through which the liquor amnii had been discharged. Dr R. divided this septum by making a small incision with a probe pointed bistoury, and then enlarging the opening with the finger towards the rectum and pubis. Labour advanced rapidly, although some resistance was still made by the lips of the septum. Mother and child did well, although the latter was born in a state of asphyxia. From the history given by the patient, there was no satisfactory explanation of the occurrence of this preternatural membrane. Her second labour, although tedious and painful, was not followed by any bad consequences, and she was not conscious of having ulcerations or any other disease of the vagina.—*Trans. Jour. of Med. for Feb.* 1829.

64. *Premature Labour, Child surviving.*—In the London Med. & Surg. Jour. for Nov. 1828, Mr J. J. CRIBB relates the case of Mrs R. aged forty years, the mother of several children, who was taken in labour November 2d, 1827. Her last menstrual period was on the 15th of April, so that she could not be advanced more than twenty-eight or twenty-nine weeks. The labour continued, *and the ovum was expelled entire*, the membranes not having been ruptured but still enclosing the fœtus and liquor amnii. On breaking them the child was found living and perfectly formed. It was able to take the breast in a day or two. The child at six weeks old weighed *two pounds and two ounces*; at ten months its weight was twelve pounds. Although "very weakly," it is able to stand when leaning against a chair, and its health is not bad.—*Cambridge, Sept.* 10, 1828.

65. *Table of Labours.*—Professor NAEGELE reports, that from the 1st Jan. 1825 to the 31st December 1826, there occurred at the Clinique at Heidelberg 412 labours, of which 6 were twin cases, and 3 abortions; not considering these 3 last, there were 415 born; 199 boys and 216 girls. There were 398 head presentations, 15 breech or feet presentations; one child presented an arm and one a shoulder.

Of the head presentations,—394 presented the cranium, (of which 378 were natural), and 4 the face. In 16 cases the position was not accurately determined. The cranium presented, in 253 cases, the right parietal (as the part most advanced), the posterior fontanelle being turned more or less to the left and anterior part of the pelvis; and in 125 cases, the left parietal, the posterior fontanelle being in a direction opposed to the former. The ordinary turns of the head occurred in all these cases, except one, in which the left frontal appeared at the outlet of the pelvis, and the face was turned up behind the pubis. The child being small, delivery was prompt. In the four face presentations, the forehead was on the left side in 2 cases, and on the right in the remaining 2.

Of the 418 births, 319 were finished by the natural powers, and 19 with artificial assistance, viz: 15 by the application of the forceps, 3 by turning, and 1 by perforating the cranium.

Of the 412 mothers, 410 left the clinic in good health; two died: 387 children were born alive, and 31 dead; of these last, 16 were dead before the commencement of labour. There were 19 premature labours, including the three abortions. The labours with the face presenting were fortunate. The children lived with one exception, owing to a prolapsus of the cord. The breech cases gave 11 living children, 1 was born with some signs of life, and 3 were dead; 2 of which manifested signs of putrefaction, and the third was premature. In the forceps cases, all the mothers and 13 children survived; 2 children were lost by the prolapsus of the cord. Turning was indicated in 2 cases by oblique or transverse positions of the fœtus, with presentation of the shoulder or arm; the infants were dead. In the third case, turning was required for a prolapsus of the cord; the infant was born in a state of asphyxia but was soon recovered. Perforation of the head was made where the antero-posterior diameter was only 3 inches. Labour had lasted several days. Rupture of the uterus occurred, the infant

which was dead, was drawn down by the feet without difficulty until the head presented, which was then opened and the child was extracted. The mother died from abdominal inflammation.

Premature labour was excited in one case of narrow pelvis. The infant was born alive and the mother did well. There were 4 cases of uterine hemorrhage; 3 before the exclusion of the placenta, and one 24 hours after. They were successfully treated by the tincture of cinnamon given internally, and by cold affusions on the abdomen. In one case, the placenta was artificially separated. *Bulletin Univer. Sep.* 1828.

66. *Premature labour artificially excited.*—The Bulletin Univ. for Sep. contains a notice of Professor D'Outrepont's opinions on the propriety of exciting labour artificially, before the full period. The Professor believes that nature often indicates the propriety of exciting premature labour, and for this reason, but especially because experience confirms the propriety of the practice, he would recommend this measure when the life of the mother is endangered by severe diseases, such as threatening convulsions, continual vomitings, and threatened suffocation from goitre or other impediments to respiration. He cites cases illustrative of the opinion, that such dangers are often avoided by delivery.

To this practice, when conscientiously and judiciously resorted to, for the safety of the mother or child, we can perceive no valid objection, but there is no principle more liable to be abused, and which demands more judgment for its proper exercise.

67. *Labour opposed by a Calculus in the Bladder.*—Mr James Threalfall, of Liverpool, reports the case of a female, in labour with her fourth child, in whom delivery was resisted by a large tumour on one side of the pelvis near the sacro-sciatic notch. This tumour could not be pushed up out of the cavity of the pelvis, and as there was not room for the head to pass, embryotomy became necessary. The operation was delayed until symptoms of exhaustion appeared. The head being opened, delivery was soon effected, but the patient continued to sink and died. Subsequent examination proved that the tumour was formed by a large calculus in the bladder.—*Ed. Med. and Surg. Journ. Jan.* 1829.

68. *Twins from a Uterus Bicornis.*—A case of this kind is related in Rust's Magazin f. d. Gesammte Heilkunde, 1828, by Dr Gabert. The uterus was divided into two unequal parts by a partition one quarter of an inch in thickness. The right cavity was the largest, and the child together with the placenta contained in it exceeded also in size that of the left cavity; in the latter the child presented in such a manner as to require turning, which operation was rendered very difficult in consequence of the smallness of the cavity in which it was contained,—the child was dead. That of the right side was delivered by the forceps; it was living and perfectly healthy.

69. *Ossification in the Placenta.*—In the Vierteljährigen Sanitätsberichten, (Hufeland and Osann's Journal, June 1828,) Dr Katerbau states, that in the month of Feb. 1828, a woman was delivered of a healthy female child; she had complained many weeks previous to her confinement of a pain in the womb, and a feeling as if something within it pricked and cut her: for these sensations many remedies were administered without effect. After the tolerably speedy birth of the child, the placenta did not come away, and the midwife supposing it to adhere proceeded to loosen it, which was easily done. During the operation the patient complained of violent pricking within the uterus.

Upon inspecting the placenta, remarks the doctor, I found that throughout its substance were interspersed numerous spicula of bone, the whole of which resembled the points of ossification in a fœtal skull; they were firmly united to the

integuments of the placenta, and in some parts, especially over the insertion of the cord, were arranged together so as to present somewhat of an arborescent appearance.

VIII. CHEMISTRY AND PHARMACY.

70. *Method of rendering Platinum Malleable, by* Wm Hyde Wollaston, M.D. F.R.S.—A paper on this subject by Dr Wollaston was read before the Royal Society of London on the 20th of November last. The method of proceeding recommended is as follows: treat the native grains with aqua regia, sufficiently diluted to avoid the solution of the iridium. Continue the digestion for three or four days in a heat, gradually raised, and allow the fine pulverulent ore of iridium to subside completely before adding the muriate of ammonia. Wash and press the ammoniacal precipitate, and heat it with the utmost caution, so as to expel the muriate of ammonia, producing at the same time as little cohesion as possible among the particles of the metal. Reduce the ignited precipitate to powder, first by rubbing it between the hands, and then by grinding the coarse parts in a wooden mortar with a wooden pestle. Wood is proper for this purpose, because any harder substance would, by producing burnished surfaces, render the metallic particles incapable of being welded. The whole is then washed in clean water, whereby the earthy impurities are got rid of; they rising to the surface by reason of their comparative levity. The gray platinum precipitate is now in the form of a uniform mud or pulp, and is ready for welding; which is effected by compression in a mould, formed of a brass barrel, six inches and a half long, and turned somewhat tapering within, so as to facilitate the extraction of the ingot when formed. "The platinum is first subjected to partial compression by the hand with a wooden plug, so as to expel the greater part of the water. It is then placed horizontally in an iron press, constructed so as to give great mechanical advantage to the power applied to produce compression. The cake of platinum is then to be heated to redness in a charcoal fire, in order to drive off all the remaining moisture; afterwards subjected to the most intense heat of a wind furnace; and lastly, struck, with certain precautions, while hot, with a heavy hammer, so as effectually to close the metal. The ingot thus obtained may, like that of any other metal, be reduced by the processes of heating and forging to any other form that may be required."

"The perfection of the above method of giving complete malleability to platinum is proved by comparing the specific gravity of a fine wire of that metal, obtained by this process, which is found to be 21.5, with that of a similar wire drawn from a button which had been completely fused by the late Dr Clarke, with an oxy-hydrogen blow-pipe, and which the author ascertained was only 21.16. A further proof of the excellence of the method employed by the author, is derived from the great tenacity of the platinum thus obtained, as determined by a comparison of the weights required to break wires made of this metal so prepared, and similar wire of gold and of iron. These weights he found to be in the proportion of the numbers 590, 500, and 600, respectively."—*Phil. Mag. and Ann. of Phil. Jan* 1829.

71. *New Metal, Pluranium.*—A new metal under this name has been discovered by M. Osann, in the native platinum of Russia. It would seem that Berzelius, to whom specimens of the metal were sent, confirms the discovery of M. Osann; for he says, "According to all the trials I have made to convince myself, you have really found a new substance; for the small crystals which sublime cannot be confounded with any other known body," &c.—*Journ. Royal Institution, Oct. to Dec.* 1828, *from Annalen der Physik*, 1828.

In the "Journ. de Chimie Médicale" for Nov. 1828, there is an account of the discovery of two additional metals by M. Osann, in the Russian platinum.

72. *Glucinum and Yttrium obtained in a separate state.*—Dr F. Wohler has succeeded in completely isolating the radicals of glucina and yttria. He obtained them by pursuing the same process that had been successful in obtaining aluminum; namely, the decomposition of the chloride, by means of potassium.

Method for Glucinum. Mix pure glucina intimately with charcoal, and heat it to redness, exposed to a current of dry chlorine. A chloride of glucinum is thus obtained, sublimed in brilliant white needles, one part of which presents a compact texture and the remainder a solid fused mass. Place the chloride, thus formed, in layers, in a platinum crucible, along with flattened pieces of potassium. Fix the cover on tightly by means of a wire, and heat with a spirit lamp. The reduction immediately takes place, and with so great an extrication of heat, that the crucible becomes of a white-red heat. Allow the crucible to cool completely, take off the cover, and empty its contents into a large glass filled with water. The fused gray mass, consisting of the chlorides of potassium and glucinum, dissolves, while the glucinum remains behind, in the form of a grayish-black powder, which is to be thrown upon a filter, washed, and dried.

Properties. Glucinum is in the form of a dark gray powder, resembling in all respects a metal precipitated in the pulverulent form. Under the burnisher, it assumes a dull metallic lustre. Its fusing point must be very high, as its particles are found to have experienced no agglutination, as a consequence of the violent heat under which they are reduced. It undergoes no change either in air, or when exposed to boiling water. When heated to redness on platinum foil, it takes fire, and burns with great brilliancy, and glucina is regenerated. In oxygen it burns with extraordinary brilliancy; and yet the glucina formed gives no indications of fusion. It burns also in chlorine, and in the vapours of bromine and iodine.

Method for Yttrium. This metal was obtained from the chloride by the action of potassium, as in the case of glucinum. During its reduction, as happened in respect to glucinum, a great extrication of heat took place.

Properties. As first obtained from the cold mass by the action of water, which dissolves every thing but the metal, it presented the appearance of small scales, exhibiting a perfect metallic lustre. After being washed and dried, it appeared under the form of a shining powder, of a grayish-black colour, and possessing a perfect metallic lustre. By reason of its metallic and crystalline appearance, it is readily distinguished from glucinum and aluminum. Under the burnisher it gives a true metallic trace. It is very far, however, from having a metallic lustre comparable to that of aluminum, which is remarkably white and metallic. Aluminum appears to be a ductile metal, while yttrium, on the contrary, is brittle.

Yttrium, at ordinary temperatures, is not oxidized either by air or water. Heated to redness in the open air, it takes fire, and burns with a dazzling splendour, regenerating yttria. In pure oxygen its combustion is as brilliant as it is possible to conceive any combustion to be. The yttria formed in the latter case gives some indications of fusion.—*Annales de Chimie, Sep.* 1828.

73. *Artificial Production of Diamonds, by* M. Gannal.—Introduce several sticks of phosphorus into a small matrass containing the bisulphuret of carbon, covered with a layer of water. The phosphorus will melt and sink to the bottom of the matrass. Mix the ingredients together, and by their reaction, phosphuret of sulphur will be formed, and a white powder generated which reflects the prismatic colours, and which appears to consist of a multitude of minute crystals. Upon repeating the experiment, and giving more time for the crystals to form, a few were obtained of the size of a millet seed. These were submitted to M. Champigny, a jeweller, who examined them carefully, and satisfied himself, 1st, that they scratched steel; 2d, that they were of a pure water; and 3d, that they caused a most brilliant reflection of light. In a word, he pronounced them to be true diamond sparks. *Journ. de Chimie Med. Dec.* 1828.

74. *Amylic Acid, a new compound of Carbon and Oxygen.*—This acid, which was discovered by M. TUNNERMANN, is prepared as follows: Mix equal parts of starch and black oxide of manganese; put the mixture into a retort, which must be only one-fourth full, and add a third equal part of water, to moisten the mass equally. Connect with the retort a receiver with a safety tube, and apply heat until the mixture is brought nearly to the boiling point, three parts of muriatic acid being at the same time added by degrees through a feeding tube. Much effervescence occurs, and when the matter in the body of the retort is nearly dry, the distillation is to be stopped, in order to prevent any impurities from passing over. The distilled product is impure amylic acid, having a strong odour of bitter almonds, though containing no hydrocyanic acid. To purify it from muriatic acid, saturate with carbonate of lime, filter, and evaporate until a pellicle forms; on cooling, amylate of lime will separate in crystals. To purify them from muriatic acid, re-crystallize until their solution does not precipitate nitrate of silver. Mix one hundred parts of the pure amylate of lime with seventy-three of sulphuric acid, diluted with twice its weight of water, and distil nearly to dryness. The distilled product will be an aqueous solution of the acid in question.

Properties. Amylic acid is sour, and readily evaporates by heat, emitting a sharp odour resembling that of hydrocyanic acid. It combines with bases, forming neutral salts, most of which are deliquescent, and *all* readily soluble. Some of its salts contain water of crystallization; others none. The dry salts are decomposed by heat into *carbonates* and *charcoal.* It dissolves carbonate of lime with effervescence. Composition, 2.5 carbon and 3 oxygen, equivalent to 10 atoms of carbon, and 9 atoms of oxygen.—*Journ. Royal Inst., Oct. to Dec.* 1828.

75. *New Pyrophorus, by* GAY-LUSSAC.—It is formed by strongly calcining together in a close vessel 27.3 grains of sulphate of potassa, and 15 grains of charcoal. It is very inflammable even in dry air. It appears to owe its greater inflammability, to its state of more minute division, to the absence of any inert earthy matter, and probably to the less amount of sulphur which it contains.

76. *Attack of* BERZELIUS *on Dr* THOMSON'S "*First Principles of Chemistry.*"—In the Philosophical Magazine for December 1828, some translations are given from a German version of BERZELIUS'S Remarks on Dr THOMSON'S work. A part of these we give below, by which our readers will perceive that BERZELIUS treats the British chemist with the utmost severity, and accuses him of scientific dishonesty. We hope, for the honour of human nature, that Dr THOMSON may be able successfully to repel the insulting charges which have been brought against him by the illustrious Swedish chemist.

"This work belongs to those few productions from which science will derive no advantage whatever. Much of the experimental part, even of the fundamental experiments, appears to have been made at the writing desk; and the greatest civility which his contemporaries can show its author, is to forget that it was ever published."

In another place BERZELIUS says, "The character of this work of THOMSON'S ought to exclude it from notice here; but it appears to me, that love for the real progress of science makes it imperative to detect quackery, and expose it to the judgment of every one as it merits."

In prosecuting our critical labours we took occasion, several years ago, to give an extended analysis of the work of Dr THOMSON above alluded to by BERZELIUS. (See Vol. I. p. 349 of this Journal, April 1826.) We did not hesitate to criticise the reasoning part of his performance freely, but had no opportunity of testing the experimental results. We thought we saw evidence of a prepossession of the author's mind with Dr PROUT'S law of even multiples, and a disposition, perhaps involuntary, to make the facts bend to that hypothesis; but we did not think then, and cannot bring ourselves to believe now, that Dr THOM-

son invented statements to suit his purposes, and palmed them off on the public as the result of experiment.

77. *Tubes produced by Lightning.*—M. Arago presented to the French Academy of Sciences, on the 3d of March, 1828, several tubes of vitrified sand, of remarkable dimensions, produced by lightning. One of them extended 19 feet in length!

78. *Caoutchouc Bags.*—On the 17th of May last, M. Chevallier communicated to the Section of Pharmacy, an account of a self-acting blowpipe, invented in England, formed of a bag of caoutchouc, by means of which even detonating mixtures of gases may be employed. M. Planche presented a forcing pump, adapted to the purpose of filling these bags: he stated that caoutchouc might be advantageously employed as a substitute for parchment and mastic in stopping bottles, and as a recipient in which to conduct the disengagement of carbonic acid from the carbonates by means of acids.—*Nouv. Bib. Med., July* 1828.

79. *Passage of Iodine into the Blood.*—M. Bennerscheidt has published in the *Archiv. des Apotheker.* a notice of his examination of the blood of an individual who had for a long time employed frictions with iodine ointment. The serum gave no indication of the presence of the iodine, but it was detected in the crassamentum by a slight blue tinge which it communicated to starch.—*Journ. de Chimie Médicale, Aug.* 1828.

80. *Analysis of Small-Pox Virus.*—M. Tremoliere, an apothecary of Marseilles, has analysed this virus, pure, and as modified by petechiæ, and given the following results:

Pure virus. Yellow; turbid; depositing by rest a grayish-white precipitate. Taste, nauseous and animal (sui generis). Odour, faint and disagreeable. Consistence, oleaginous. Sp. gr. 1.031. It contained, 1st, Fibrin; 2d, Mucus; 3d, Hydrochlorate of soda (common salt); 4th, Sulphate of potassa; 5th, Phosphate of lime; 6th, Water.

Virus modified by petechiæ. As obtained before death, odour faint and very disagreeable; three hours after death, smell almost insupportable. It was thinner than the pure virus, and had much resemblance to sanious pus. It consisted of, 1st, Fibrin; 2d, Mucus; 3d, Hydrochlorate of soda; 4th, Hydrocyanate of soda; 5th, Sulphate of potassa; 6th, Phosphate of lime; 7th, Water.

M. Lassaigne remarks on this latter analysis, that if the reagents employed by M. Tremoliere have not led him into error, the detection of hydrocyanate of soda must be esteemed a highly curious fact; as it is the first instance of a salt of this kind being detected in the animal fluids.—*Journal de Chimie Médicale.*

81. *Chemical Nature of False Membranes.*—These membranes, according to the chemical analysis of M. Lassaigne, result from the organization of a fibrinous matter, like that contained in the blood, and are not of an albuminous nature, as heretofore supposed. This statement has been confirmed by M. Laugier.

In the Journal de Chimie Medicale for October 1828, M. Lassaigne has taken occasion to report the analysis of a membrane, analogous to the false membranes, which was formed on the arachnoid of the horse. It consisted almost entirely of fibrin, mixed with a small quantity of albumen and fatty matter. So that this membrane follows, in chemical composition, the analogy of similar morbid products, formed in other parts of the animal economy.

82. *Pineal Concretions in the Horse.*—M. Lassaigne characterizes these concretions as follows:—Micaceous, and soft to the touch. Treated with boil-

ing alcohol, a portion dissolves, which precipitates on cooling in light and pearly white scales. This matter, being fusible above 212°, inalterable by a solution of caustic potassa, and assuming an orange-red colour by concentrated sulphuric acid, may be regarded as cholesterin. The portion, insoluble in the alcohol, proved to consist of albuminous animal matter, and sub-phosphate of lime. The presence of cholesterin in these concretions, M. L. remarks, is not a new fact. He has had occasion, as well as other chemists, to detect its presence in morbid productions, in which it could not have been derived from the bile. Thus, he has detected it in the substance of a sarcocele, and M. BARRUEL has demonstrated its presence in a liquid extracted from a hydrocele.

It would, therefore, appear, that cholesterin is not merely a healthy animal principle, forming a constituent of the bile, but also, in certain cases, a morbid product.—*Journal de Chimie Médicale, Oct.* 1828.

83. [The following article was handed to us too late for insertion in our original department, where, from its value, it would have been deserving of a place. The author is already advantageously known to the scientific public for his successful chemical researches on opium.—ED.]

Practical Observations on the Preparation of Morphia, &c. by EDWARD STAPLES, M.D.—Since the method of precipitating crystalline morphia, from its solution in alcohol and acetic acid combined, was published, (vide Vol. V. page 474 of this Journal), improvements have been introduced into the process, which simplify the formula, and greatly enlarge the product. The following experiments will best illustrate them.

1000 grains of very pure opium, perfectly dry, and in small pieces, were digested in eight ounces of distilled water, for six days, with occasional agitation, in a temperature of about 70° Fah. It was then thrown upon a coarse paper filter, previously moistened with pure water. Six ounces and a half of highly coloured liquor, of specific gravity 1043, were obtained. To this solution, six ounces and a half of alcohol of 35 Beaumé, were added. The temperature rose eight degrees, and the transparency was unaffected. Immediately after the addition of the alcohol to the watery solution, two drachms of aqua ammoniæ of specific gravity 950, mixed with six drachms of alcohol of 35, were thrown in. The liquor immediately became rather darker, no other visible change taking place; but in about half an hour, crystals began to form abundantly. Shortly after this, two drachms more of aqua ammoniæ, similarly combined with alcohol, were thrown in, and the whole left at rest twenty-four hours; when one hundred and thirty-eight grains of crystals were collected upon a filter. These crystals, after having been washed with a small portion of water, were of a light salmon colour, and when thrown into nitric acid, became immediately of a light red colour.

The dregs of the opium, remaining on the filter, were washed with four ounces of distilled water, the water being several times returned upon the filter. The liquid obtained had the specific gravity of 1013. This was treated in all respects as that obtained by the first filtration, except that only half the relative quantity of alcohol was used to suspend the colouring matter, and a smaller quantity of ammonia was employed to precipitate the crystals. The product of this precipitation was twenty grains, of a colour rather lighter than that first obtained, but in every other respect similar.

The dregs of opium still remaining on the filter were now digested in eight ounces of alcohol of 35, for three days, in a temperature about 70°. After filtration, the highly coloured tincture was concentrated by distillation to one-fourth, and the resin which it abundantly contained, separated by the addition of six ounces of distilled water. The slightly alcoholic transparent liquor, thus obtained, when separated from the brownish resin precipitated by the water, was reduced by evaporation to one-half. When cold, an equal quantity of alcohol was added, to suspend the colouring matter, and ammonia united with alcohol, then thrown in as a precipitant. In twenty-four hours, about twenty grains of crystals were collected upon a filter, and washed with a small quantity of water.

These were much lighter in colour than the first product, and not similarly affected by nitric acid.

Opium of the same quality as that just alluded to, afforded results nearly the same in amount, when the same quantity was digested in ten ounces of water, acidulated with eighty grains of citric or tartaric acid, for the same length of time. The filtered acid solutions were combined with an equal quantity of alcohol, and the acid saturated by ammoniated alcohol. The crystals thus obtained were lighter coloured than when water alone was used. Ten ounces of common distilled vinegar, to 1000 grains of opium, afforded the same result as when tartaric or citric acid was used.

In the treatment of opium* of medium quality (in which class may be ranked nearly all that is generally found in commerce,) with the intention of obtaining morphia, vegetable† acids, in proportions corresponding with those just indicated, will be found to answer better than water alone, the latter being applicable only to the purest kind of opium, upon which it exerts a solvent power, superior to any other menstruum. Opium of a grade still inferior, when adulterated with resinous matter, or substances very soluble in water or diluted vegetable acids, may be advantageously treated in the following manner:—Digest one part of opium in two parts of water for three days, then add six parts of alcohol of 35, and digest, with occasional agitation, three days more. Separate the tincture by the filter, and wash the dregs with two ounces of alcohol, several times returned on the filter. Reduce the tincture thus obtained to one-fourth by distillation in a water-bath. Throw the concentrated tincture, while warm, into six parts of distilled vinegar, or a weak solution of citric acid. Then separate the dark coloured resin which is copiously precipitated, combine the clear liquor with six parts of alcohol of 35, and employ ammonia in combination with alcohol as a precipitant. Good products will thus be obtained from opium, which, in consequence of impurities, will be subject to great waste when otherwise treated. If, instead of separating the resin from the tincture, as directed above, ammonia be thrown into it, the precipitate obtained will be highly coloured, and consist one-half of impurities.

The colouring matter associated with morphia in opium, can be more effectually suspended by alcohol, than it can be removed after precipitation, even supposing it experiences no change in its solubility from the action of concentrated alkalies. But its solubility is certainly lessened by their action; and this circumstance may be a source of great loss, when conducting the purification of coloured precipitates by diluted alcohol, as directed in other formulæ. In the several menstrua, above alluded to, the presence of colour matter, in consequence of its not being acted upon by ammonia in an attenuated form, insures the more perfect precipitation of the morphia. The precipitates obtained by either of the above processes may be rendered pure and white by solution in boiling diluted alcohol, from which the morphia crystallizes by cooling; or by solution in diluted sulphuric acid, combined with diluted alcohol, from which, after perfect solution has been promoted by heat, a crystalline precipitate may be obtained by the cautious addition of ammonia.

Narcotine may be removed from opium by oil of turpentine. Throw into oil of turpentine, heated to 212°, one part of opium in dry powder, to sixteen parts of the oil. Sustain the temperature half an hour with occasional agitation. Filter and remove the oil of turpentine by distillation, to facilitate which alcohol must be added, when the oil is reduced to about two parts. Narcotine will crystallize in the retort. On cooling, a portion of resin will also be removed. The morphia is unaffected by the turpentine.

---

* Opium of medium quality affords twelve drachms of morphia to the pound of opium (7000 grains); superior quality, over fifteen drachms.

† Sulphuric, or other strong acids, are entirely inadmissible.

Miscellaneous Articles.

UNIVERSITY OF PENNSYLVANIA.

At a Medical Commencement, held March 21st, 1829, in the Saloon of the Masonic Hall, Chestnut-street, the Degree of Doctor of Medicine was conferred upon the following gentlemen, who had passed their examinations by the Medical Faculty.

Nova Scotia.—*Edward L. Brown*, Causes of Malignant Epidemics.

Island of Cuba.—*Joseph M. Urquiola*, Menstruation.

Rhode Island.—*Alexander P. Moore*, Rubeola.

New York.—*Gilbert S. Fowler*, Puerperal Fever.

Connecticut.—*Josiah Barnes*, Spina Bifida. *Caleb Ticknor*, Influence of Diet, Dress, and Amusement upon Health.

Maine.—*Israel B. Bradley*, Cesarean Operation.

New Jersey.—*Lewis Drake*, Trachitis. *Charles Higbee*, Medical Electricity, Galvanism, and Magnetism. *Allison Ely Perrine*, Accidental Uterine Hæmorrhage. *Robert J. Woodruff*, Cause of Yellow Fever. *James S. Carpenter*, Hepatitis. *John H. Blackwell*, Morbid Effects of Drinking Cold Water. *Joab W. Hunt*, Dysentery.

Pennsylvania.—*Richard K. H. Sims*, Non-existence of Syphilitic Virus. *Samuel Maclay*, Intermittent Fever. *Robert R. Dorsey*, Efficacy of Rest in Injuries of the Knee. *Daniel Lachenour*, Ptyalism. *Martin Weaver*, Dysentery. *Hugh Meredith*, Retrocedent Gout. *Richard Maris*, Articular Affections. *Thomas Pritner*, Lead Disease. *Samuel C. Merwin*, Generation. *Esaias Kinzer*, Position in Surgical Diseases. *George Thomas*, Influence of Habit. *Henry D. Dietrich*, Hæmoptysis. *William Rinehart*, Hepatitis. *William L. Sterigere*, Angina Pectoris. *George Halberstadt*, Structure and Pathology of Mucous Membranes. *Joseph Peace*, Delirium Tremens. *James C. Kennedy*, Trachitis. *Charles Huffnagle*, Dyspepsia. *David M. Fort*, Cholera Morbus. *Diller Luther*, Caries of the Spine. *Joshua Y. Jones*, Typhus Fever. *William Irvin*, Gastritis. *John J. White*, Circulation. *John Vaughan Smith*, Gastritis. *Edward H. Glentworth*, Jaundice. *William N. Johnson*, Music in Mental Diseases. *Joseph Togno*, Endosmosis and Exosmosis. *Charles Fronefield*, Scrofula. *Henry Lippincott*, Hæmoptysis. *Joseph M. Heister*, Passions. *Charles W. Duffield*, Hæmoptysis. *Robert R. Reed*, Vital Functions and Mechanical Force. *Henry Pettit*, Hydrocephalus. *Horatio N. Morris*, Digestion. *Samuel J. Hobson*, Iodine. *George Powell*, Erysipelas. *Ralph Hammersly*, Metastasis. *Amos Pennebaker*, Respiration. *Aaron Torrence*, Caries of the Spine. *Columbus C. Conwell*, Vegetable Chemistry.

Delaware.—*Samuel Murphey*, Hepatitis. *Thomas F. Dale*, Diseases of the Alimentary Canal in Children. *Henry Gibbons*, Varioloid.

Maryland.—*Lyttleton M. Robertson*, Menstruation. *Albert R. Ober*, Diabetes.

Virginia.—*Marvin R. Griswold*, Dyspepsia. *Orlando Fairfax*, Acute Stage of Dysentery. *Joseph E. Cox*, Hæmoptysis. *James Milton Inge*, Gastritis. *William Baylor*, Cholera Infantum. *Cuthbert D. Barham*, Hæmoptysis. *William H. Edwards*, Cholera Infantum. *William Henry Shield*, Hepatitis.

James S. Tunstall, Gastritis. *John N. Powell*, Uterine Hæmorrhage. *Benjamin J. Harrison*, Diet in Convalescence. *William Smith*, Tic Doloureux. *Peter H. Anderson*, Typhoid Fever of Amelia. *George J. Smith*, Gastro-Enteritis. *Singleton Jones Cooke*, Mechanism and Physiology of the Human Head. *William E. Hardaway*, Gonorrhea Virulenta. *Henry D. Magill*, Hæmoptysis. *Conway Rollins Nutt*, Bronchocele. *Henry K. Jones*, Dysentery. *John G. Williamson*, Epilepsy. *William R. Smith*, Anatomy and Functions of the Skin. *Nicholas M. Sebrell*, Enteritis. *John D. Porter*, Bilious Diseases of Rappahannock.

North Carolina.—Michael D. Donnellan, Effects of cold. *Milo A. Giles*, Syphilis. *William P. Morgan*, Small Pox, and Causes of Failure in Vaccination. *Nicholas L. B. Stith*, Dysenteria. *John Wesley Potts*, Med. Topography, and Autumnal Fever of Washington, N. C. *Thomas Davis*, Dysentery.

South Carolina.—William G. Adams, Chronic Dysentery. *Solomon Etting Myers*, Dyspepsia. *Thomas Hunt*, Pathology of Jaundice. *Albert G. Goodwyn*, Hæmoptysis. *Joel R. Adams*, Hæmorrhoids. *Martin Philips*, Icterus.

Alabama.—Fleming Jordan, Hepatitis. *Henry S. Levert*, Metallic Ligature of Arteries.

Georgia.—Augustine Owen, Acute Bronchitis. *Clark D. Parks*, Effects of of Cold. *Thomas W. Ingram*, Sanguiferous Circulation. *John W. Wiley*, Cold and Heat as Causes of Disease.

District of Columbia.—Thomas Miller, Jr, Jaundice.

Kentucky.—Norborne A. Galt, Idiopathic Dyspepsia.

Ohio.—Edson B. Olds, Secale Cornutum. *Joab Wright*, Medicinal Qualities of Water.

Louisiana.—Edward R. Chew, Strictures of the Urethra. *Frederick N. Ogden*, Gun-shot Wounds of Intestines.

Tennessee.—Robert H. Rivers, Hæmorrhoids.

Aggregate, 107.

W. E. HORNER, *Dean*.

On the same occasion the corner-stone of the new Medical Hall was laid by the Right Rev. WILLIAM WHITE, Bishop of Pennsylvania, and an inscription to the following effect, along with the list of Graduates, was deposited; a suitable Address being delivered to the graduates and to the public, in the Masonic Hall, by the Rev. WILLIAM H. DELANCEY, D.D. Provost, &c.

UNIVERSITY OF PENNSYLVANIA.

Trustees.

The Governor of the State, ex officio, President of the Board.
Rt Rev. William White, D.D.
Edward Burd.
William Rawle, LL.D.
Benjamin R. Morgan.
James Gibson.
Horace Binney, LL.D.
William Meredith.
Benjamin Chew.
Rev. James P. Wilson, D.D.
Robert Waln.
John Sergeant, LL.D.
Thomas Cadwalader.
Nicholas Biddle.
Zaccheus Collins.
Peter S. Duponceau, LL.D.
Charles Chauncey.
Joseph Hopkinson, LL.D.
Joseph Ingersoll.
Rev. Philip F. Mayer, D.D.
Philip H. Nicklin.
Rt Rev. Henry U. Onderdonk, D.D.
John C. Lowber.
Robert Walsh, Jr, LL.D.
Rev. Thomas H. Skinner, D.D.
Joseph Reed, *Secretary*.

Professors in the Collegiate Department.

Rev. WILLIAM H. DELANCEY, D.D., Provost and Professor of Moral Philosophy.
ROBERT ADRAIN, LL.D. Vice-Provost, and Professor of Mathematics.
Rev. SAMUEL B. WYLIE, D.D., Professor of Languages.

ALEXANDER DALLAS BACHE, Esq., Professor of Natural Philosophy and Chemistry.
Rev. EDWARD RUTLEDGE, A.M. Assistant Professor of Moral Philosophy.

Professors in the Medical Department.

PHILIP SYNG PHYSICK, M.D. Professor of Anatomy.
NATHANIEL CHAPMAN, M.D. Professor of the Institutes and Practice of Physic and Clinical Medicine.
WILLIAM GIBSON, M.D. Professor of Surgery.
JOHN REDMAN COXE, M.D. Professor of Materia Medica and Pharmacy.
ROBERT HARE, M.D. Professor of Chemistry.
THOMAS C. JAMES, M.D. Professor of Midwifery.
WILLIAM E. HORNER, M.D. Adj. Professor of Anatomy.
WILLIAM P. DEWEES, M.D. Adj. Professor of Midwifery.
SAMUEL JACKSON, M.D. Assistant to the Professor of the Institutes and Practice of Physic, and of Clinical Medicine.

WILLIAM E. HORNER, *Dean.*

Andrew Jackson, President, John C. Calhoun, Vice-President, John Marshall, Chief Justice, of the United States.
John Andrew Shulze, Governor, John B. Gibson, Chief Justice, of the Commonwealth of Pennsylvania.
George M. Dallas, Mayor of the City of Philadelphia.

This Inscription, deposited March the twenty-first, A.D. one thousand eight hundred and twenty-nine, commemorates the laying of the Corner-stone of the New Medical Hall, fifty-four years after the original organization of the Medical Faculty by Drs Morgan and Shippen. The Institution having in the mean time conferred the Degree of Doctor of Medicine upon upwards of two thousand Gentlemen educated within its walls, who, dispersed in different quarters of the United States, have thus extended the blessings of sound Medical Instruction, and in many instances organizing themselves into new Schools of Medicine, have thus made the University of Pennsylvania the Parent of Medical Science in the United States.

Architect, William Strickland. Stone-cutter, John Strothers. Bricklayer, Daniel Groves. Carpenter, John O'Neil.

COLUMBIAN COLLEGE, *District of Columbia.*

At the late commencement of the Medical Department of the Columbian College, in the District of Columbia, held in Washington City, March 11, 1829, the degree of Doctor in Medicine was conferred on the following gentlemen:

J. Irwin Dunn, of Washington city, on Vermes.
J. B. Elliott, of Washington city, on Mania a Potu.
J. M. Higgins, of Maryland, on Cholera Infantum.
Gonsalvo Hodges, of Maryland, on Enteritis.
J. L. M'Williams, of Maryland, on Hæmoptysis.
Benjamin F. Nourse, of Washington city, on Variola.
J. M. Stewart, of Maryland, on Hydrocephalus.
A. M. Stanford, of England, on Dysmenorrhea.
Timothy Upham, New Hampshire, on Typhus Fever.

The professors of the Medical Department of the Columbian College, in the District of Columbia, anxious to extend the benefits of regular medical education to students whose pecuniary means will not enable them to attend courses of public lectures, have adopted the following resolutions:

Resolved, That this school be open to the admission of one student of the character contemplated in the foregoing preamble, from each of the United States, and one from each of the Territories, to attend all the lectures without charge.

Resolved, That the senators of congress are hereby authorized to select one such student from their respective states, and the delegates of congress one such student from their respective territories, who shall be admitted to gratuitous attendance on the lectures, by exhibiting a certificate of selection from the senators or delegate, to the dean of this department. It is to be understood that said student shall pay five dollars on entering the school, as a matriculating fee, and should he graduate in this institution, a fee of twenty dollars will be required.

JAMES M. STAUGHTON, M.D., *Dean.*

Washington City, Jan. 24, 1829.

PHILADELPHIA MEDICAL INSTITUTE.

The summer course of Lectures will begin on Monday, the 6th of April, and end on the Saturday preceding the first Monday of November. The month of August is a vacation.

Dr N. CHAPMAN, on the Practice of Medicine.
Dr W. E. HORNER, on Anatomy.
Dr W. P. DEWEES, on Midwifery.
Dr SAMUEL JACKSON, on Materia Medica.
Dr J. BELL, on the Institutes of Medicine, and on Medical Jurisprudence.
Dr J. K. MITCHELL, on Chemistry.
Dr H. L. HODGE, on the Principles of Surgery.
Dr THOMAS HARRIS, (Surgeon United States' Navy,) on Operative Surgery.

PHILADELPHIA MEDICAL SOCIETY.

Officers for 1829.

President.—PHILIP SYNG PHYSICK, M.D.
Vice Presidents.—JOSEPH PARRISH, M.D. SAMUEL JACKSON, M.D.
Corresponding Secretaries.—JOHN BELL, M.D. B. H. COATES, M.D.
Orator.—BENJAMIN H. COATES, M.D.
Curators.—ALFRED DRAKE, M.D. THOMAS H. RITCHIE, M.D.
Treasurer.—D. FRANCIS CONDIE, M.D.
Librarian.—ALFRED DRAKE, M.D.
Library Committee.—HUGH L. HODGE, M.D. ROBERT M. HUSTON, M.D. CHARLES D. MEIGS, M.D.

The following lectures were read before the Society during the session of 1828-9:—

Dr Condie. On Peritonitis, as occurring in Young Children.

Dr Bell. On the Origin of the Periodical Fevers of Rome and its Vicinity. Communicated by Professor GIACOMO FOLCHI, of Rome.

Dr R. Coates. On the Connection of certain Mechanical and Hydrostatic Phenomena with Physiology and Surgical Practice.

Dr Darrach. On the Reciprocal Circulation of the Blood between the Mother and Fœtus, and the Use of the Placenta.

Dr Rousseau. On the Management of Labour during Parturition.

Dr Barnes. On Conception.

Dr Hodge. A Communication from Professor QUADRI, of Naples, on Acupuncturation.

Dr Jackson. On the Difference of Action between General and Topical Depletion.
Dr Bell. On Medical Creeds.
Dr Hodge. On Erysipelas.
Dr Horner. On the Pathology of the Nervous System.
Dr Meigs. Remarks on some of BROUSSAIS's Propositions in Medicine.
Dr Harris. On Asphyxia.
Dr Beattie. On the Use and Abuse of the Forceps in Obstetrical Practice.
Dr Rousseau. On Hydrophobia.
Dr Condie. On Hæmatemesis.

The following gentlemen were elected honorary members of the Society:—

Dr Sacco, of Milan; Professor Giacomo Folchi, of Rome; Professor Quadri, of Naples; Professor Mojon, of Genoa; Professor J. D. Carns, of Leipsic; Dr A. N. Gendrin, of Paris; Dr Chauffard, of Avignon; Dr Bournonville, of Philadelphia.

The following gentlemen were admitted as junior members of the Society during the session.

Pennsylvania.—Robert H. Jones; J. F. Bullock; Joseph Baldwin; William N. Johnson; John Perdui; Samuel Abernethy; Obed Bailey; J. Meckley; Simon A. Wicks; Elijah Griffiths; George W. Norris; James M'Clintock; John R. Taggart; Dr Erasmus Thomas.
New Jersey.—Dr John R. Sickler; William P. Garrison; Charles Sartori.
Maryland.—Lyttleton M. Robertson.
Virginia.—John N. Powell; Singleton J. Cooke; William Pettit.
Ohio.—Gustavus Allen; Edson B. Olds; Edward Thompson; Joab Wright.
South Carolina.—William G. Adams.
Louisiana.—F. N. Ogden; Dr Edward Chew; Augustus H. Cenas.
Trinidad de Cuba.—Joseph M. Urgiola.

From the Records of the Society.
ROBERT M. DUNBAR,
Recording Secretary.

PHILADELPHIA VACCINE INSTITUTION,

Established in the year 1822, with the approbation of Professors PHYSICK, CHAPMAN, JAMES, GIBSON, and COXE, and Doctors HARTSHORNE, MONGES, HEWSON, &c. &c.

The subscribers to the above Institution, those practitioners who have for the last eleven years obtained their supplies of vaccine virus from the undersigned, and the profession generally throughout the United States, are respectfully informed, that applications for vaccine virus will be attended to as usual, at all seasons of the year, and at one day's notice, by the undersigned,

JOSEPH G. NANCREDE, M.D.
S. E. corner of Tenth and Walnut streets, Philadelphia.

On the Mortality in the City of Philadelphia, during the Year 1828.—From the statement of deaths and births in the city of Philadelphia, during the past year, published by the Board of Health, Mr Samuel Hazard, Editor of the Pennsylvania Register, has made the following remarks and calculations, which we copy from the above work, Vol. 3, page 128.

"The whole number of deaths is 4292, viz. Males 2370, Females 1922—Whites 3586, Colored 706: or 1 in 6 of the whole.

Died under the age of 15, 2196, or more than one-half.
from 15 to 40, 1070, about one-fourth.

3266, or more than three-fourths under age of 40.

40 to 70,	397, or 1 in 11.	
70 to 80,	150, or 1 in about 28.	
80 to 90,	90, or 1 in 48.	
90 to 120,	17, or 1 in 252.	

	Adults.	Children.	Total.
During Spring months,	449	413	862
Summer do.	492	835	1327
Autumnal do.	587	583	1170
Winter do.	487	446	933
	2015	2277	4292

The greatest number of deaths was in		July.
The smallest	do. do.	May.
The greatest number of adults died in		September.
The smallest	do. do.	May.
The greatest	of children do.	July.
The smallest	do. do.	February and May.

The number of paupers who died under the care of the Guardians of the Poor was 356; or 1 in 12 of the whole number of deaths (deducting the still-born); of these 356, it appears by the Alms-House table, in Register page 90, 271 died in the house, leaving for out-door paupers 85; of these 271, 44 died in the *cells*, being about one-eighth of 349, the whole number admitted into them during the year—and the most of *them* for mania a potu."

About 11 deaths (exclusive of still-born), occur in the city and districts every 24 hours: or, *one death* in every *two hours and eleven minutes.*

About *one-half* of the *deaths* were occasioned by the following six diseases, viz.

Of Consumption,	581
Convulsions,	315
Cholera,	291
Debility,	286
Dropsy in the head,	110
Fevers of different kinds,	382
	1965

Of those who died of Convulsions, Cholera, Debility, and Dropsy in the head, more than *one-half* were children under *one year* of age, or nearly *three-fourths* under two years.

More persons died of Consumption than of any other disease, viz. 581; being a greater number than in any former year, excepting 1826, when 587 died. The following table shows the numbers by that disease, and the total deaths (excluding still-born), for every year since the Bills of Mortality were commenced. The proportion to the whole number of deaths (rejecting still-born) is about 1 in 6½.

1807	306	1961	1819	459	2979
1808	301	2145	1820	446	3189
1809	311	1884	1821	438	2161
1810	306	1897	1822	488	3334
1811	369	2249	1823	536	4372
1812	339	2017	1824	576	4284
1813	216	2223	1825	519	3539
1814	274	2041	1826	587	3845
1815	347	1943	1827	523	3659
1816	434	2225	1828	581	3971
1817	349	2107			
1818	396	2609	Total,	9,101	60,634

Of Small-Pox, 107 died.

From drunkenness there were 30 deaths, and from mania a potu 82: making together 112—admitted to be from that cause. How many concealed under other names!

It is remarkable, in so populous a city, where persons of every age are so much exposed to dangers of every kind, that there should be so few deaths from casualties as 19—although under this head might properly be placed, drowning, from which there were 53 deaths, (a larger number than usual), making 72. Of suicide, there were 7 cases.

There were in 1828, 7200 Births, viz. 3694 Males, and 3506 Females: or an addition to the population from this source, of (deducting still-born), 2587 beyond the deaths, or in the proportion of 72 births to about 43 deaths.

There were 321 children still-born, or 1 of every 22 births.

It implies an improved state of obstetric practice that only *three* cases out of 7200 proved fatal.

There were about 20 Births in each 24 hours, or about one in every hour and twelve minutes; while the deaths as above stated, were one in about 2 hours and 11 minutes.

	Births in different Years.			*Practitioners.*	*Deaths.*
	Male.	Female.	Total.		
1820	1709	1501	3210*	78	3374
1821	2630	2417	5047	99	3172
1822	3021	2701	5722	107	3591
1823	2977	2836	5813	111	4600
1824	3062	2771	5833	117	4399
1825	3444	3182	6626	129	3812
1826	3526	3214	6740	126	4151
1827	3581	3452	7033	127	3945
1828	3694	3506	7200	137	4292

TRANSYLVANIA UNIVERSITY.

ALVA WOODS, D.D. President and Professor of Moral and Intellectual Philosophy.

BENJAMIN WINSLOW DUDLEY, M.D. Professor of Anatomy and Surgery.

CHARLES CALDWELL, M.D. Professor of the Institutes and Clinical Practice.

JOHN ESTEN COOKE, M.D. Professor of the Theory and Practice of Medicine.

WILLIAM HALL RICHARDSON, M.D. Professor of Obstetrics and Diseases of Women and Children.

CHARLES WILKINS SHORT, M.D. Professor of Materia Medica and Medical Botany, and Dean of the Faculty.

JAMES BLYTHE, D.D. Professor of Chemistry.

CHARLES SHAW, M.D. Librarian of the Medical Faculty.

GRADUATES.

At a public commencement held in the Chapel of the University, on Tuesday the 10th of March 1829, the degree of Doctor of Medicine was conferred on the following gentlemen, alumni of the School, who had undergone satisfactory examinations before the Medical Faculty, Trustees and President, and written Theses on subjects annexed to their names.

Kentucky.—Robert Stuart Apperson, of Richmond, on Sarcocele. *John Charlton Beatty, of Mason County*, on Paracyesis Abortus. *Richard Wil-*

* From 1st April to 31st December.

liam Ferguson, of Louisville, on the Physiology and Pathology of the Teeth. *Charles Hay, of Fayette County*, on the Anatomy and Physiology of the Stomach. *Henry Hopson, of Christian County*, on Menstruation. *John Terrel Lewis, of Lexington*, on Milk Sickness. *Preston Lindsay, of Scott County*, on the Identity of Summer, Fall and Winter Epidemics. *Thomas Jefferson Moore, of Bowling-green*, on Erysipelas. *Alexander Hamilton Peck, of Lexington*, on Phthisis Pulmonalis. *James Ritchie, of Lexington*, on Hydrocele. *Thomas Stevenson, of Meade County*, on Syphilitic and Pseudo-syphilitic Affections. *Robert James Waggener, of Columbia*, on the Functions of the Large Intestines. *Henry Francis Washington, of Russelville*, on Dyspepsia. *Walter Carr Winter, of Lexington*, on Ophthalmia Purulenta.

Mississippi.—Charles Walton Harris, of Pike County, on Lacteal and Venous Absorption. *Charles Shaw, of Jefferson County*, on the Nature and Treatment of Syphilis. *Solomon Tracy, of Meadville*, on Uterine Hæmorrhage. *William Walworth Usher, of Wilkinson County*, on Malignant, Congestive Bilious Fever. *William Kinne Wilson, of Adams County*, on Dropsy. *Ellis Pusey Passmore, of Meadville*, on Uterine Hæmorrhage.

Alabama.—William Kelsay Adams, of Limestone County, on the Medical Topography and Endemic Fever of Limestone county, Alabama. *Richard Tucker Harper, of Lawrence County*, on the Analogy between the Liver and the Brain. *Jacob Chancy Jordan, of Linden*, on the Operation of Lithotomy. *Sidney Smith Prince, of La-Grange*, on the Medical Topography and Endemic Fever of Franklin county, Alabama. *William Williams Wilson, of Monroe County*, on Sleep.

Tennessee.—Erasmus Darwin Fenner, of Jackson, on Uterine Hæmorrhage of Pregnancy. *James M'Kinney Gray, of Sumner County*, on Opium. *John M'Call, of Smith County*, on Purgative Medicines. *Henry Holmes Treadway, of Murfreesboro'*, on Syphilis.

South Carolina.—Archibald Ingram Barron, of York District, on Syphilis. *Thomas Latta Dunlap, of Lancasterville*, on Hernia of the Abdominal Rings. *Gilbert Tennent, of Abbeville District*, on the Medical Topography of Abbeville District, S. C. with Observations on Bilious Fever as it occurred there in the summer of 1828. *Franklin Williams, of Lawrens District*, on Diet.

Virginia.—William Bomar, of Halifax County, on Hydrocele. *Peter Leath Penn, of Patrick County*, on Curved Spine.

Louisiana.—Owen Connelly Blount, of East Baton-Rouge, on the Teeth. *William Henry Lyne, of East Feliciana*, on Bilious Fever.

Michigan.—Rice M'Coy, of Carey's Station, on the Actual Cautery. *Josephus M'Coy, of Carey's Station*, on the Pathology and Medieal Treatment of Calculous Affections.

Ohio.—Rezin Thompson, of Harrison County, on Digestion.

C. W. SHORT, M.D. *Dean.*

The Philosophical Magazine for January, 1829, announces the death of Dr William Hyde Wollaston, well known to the scientific world as an eminent philosopher and chemist.

SOLOMON W. CONRAD has been elected Professor of Botany in the University of Pennsylvania.

INDEX TO VOLUME VII.

Abdominal pregnancy, case of, 424
Abscess of the liver opening into the duodenum, . . 393
Absorption of croton oil by the hand, purgative effects of, . 406
Absorption of poison, M. Pavas on the means of preventing, . 412
Absorption of iodine, . . 432
Abstinence, chemical changes produced in the fluids by, . 220
Abstinence, effects of, experiments by Dr Collard de Martigny, . . 196
Acceleration of the pulse in high altitudes, . . . 182
Accidental cure of an inflammation of the tongue, . . 404
Acupuncturation in nervous affections of the eye, by Dr Quadri, of Naples, . . . 246
Acupuncturation in rheumatism, 404
Allert's cure of excessive thirst by camphor, . . . 195
Alvo-urinary calculus, . . 422
Ambulatory clinic at Halle, . 380
Amputation of the lower jaw, 208
neck of the uterus, case of, . 420
Amylic acid made artificially with carbon and oxygen, . . 431
Amussat's dissection of a man who hung himself, . . 205
Amussat's operations on the bladder, . . 24, 212
Anatomy, comparative, of the brain, by M. Serres, reviewed, 336
Anatomy, report to Parliament on its difficulties in England, . 177
Analysis of small pox virus, . 432
Anderson's case of artificial anus, cured, ... 208
Aneurism of carotid artery, cured by Valsalva's method, . 418
Aneurism of external iliac artery cured by ligature, . . 206
Aneurisms, unusual variety of, 423
Aneurism of the middle meningeal artery, . . . 424
Angina maligna, nitrate of silver in, ... 411
Annals of the ambulatory clinic at Halle, review, . . 380
Anus, imperforate, productive of a calculus, . . . 422
Armstrong, Dr, on inflammations of the digestive organs, . 188
Arnott, Dr, on medical physics, reviewed, . . . 124
Artificial anus cured by caustic and compression, . . 208
Artificial diamonds produced, . 430
Artificial production of amylic acid, . . . 431
Arago's case of singular tubes of sand produced by lightning, 431
Artificial excitement of premature labour, . . . 428
Artificial palates, utility of, . 421
Asphyxia, Leroy's remarks on excessive insufflation in, . 205
Atkins, Dr, his establishment for the cure of congenital deformity, ... 223
Atmospheric pressure, removal of it in making minute injections, ... 28
Audibert's cures of intolerance of light by belladonna, . . 194

Baker on the medicinal uses of the herb cherrattah, . . 410
Barkhausen on delirium tremens, review, ... 301
Barth's, Dr, case of softening of the stomach, . . . 395
Barth's, Dr, case of hydrophobia from cold, ... ib.

Barthez on the action of deutobromide of mercury on the animal economy, . . 219
Baudelocque's modes of accelerating parturition . . 215
Bayle on iodine in mammary tumours, . . . 198
Bayle's case of salivation cured by masticating cinnamon, . 412
Beesley's, Dr T. R. cases of gangrene of the throat indicating calomel, ... 66
Belladonna applied in strangulated hernia . . . 199
Belladonna in nervous affections of the eyes, . . . 194
Bell on physiology applied to therapeutics, ... 36
Bell's address on the institutes of medicine and medical jurisprudence, ... 225
Bernstein on acupuncturation in rheumatism, . . 404
Bennerscheidt on the passage of iodine into the blood, . 432
Berzelius's severe censure of Thompson's "First Principles," 431
Bibliographical notice of annals of the ambulatory clinic at Halle, 380
Bibliographical notice of Cazenave and Shedel on cutaneous diseases, after Biett, . 385
Bibliographical notice of Meigs's oration on medical education, 382
Bibliographical notice of Meigs's translation of Hufeland on Scrofula, ... 386
Bibliographical notice of Robert on the epidemic small-pox at Marseilles, . . 378
Bibliographical notice of Wolff on infantile diseases, . . 167
Biett, Dr, Cazenave and Shedel's account of his lectures on cutaneous diseases, noticed, . 385
Biographical notice of professor Chaussier, ... 162
Blowpipes made with caoutchouc bags, ... 432
Blande's case of laryngotomy, 420
Bleeding, general and local, in cases of poisoning, . . 201
Blister, large, cures a case of inflamed lymphatics, . . 408
Blisters advantageously dressed with raw cotton, . . 268
Blondeau on the fermentation of opium previous to the extraction of morphia, . . 222
Blood-letting, Louis on, . 415
Bond on the treatment of fractured patella, ... 286
Botany, new professor of, elected, 442
Bostock on summer catarrh, reviewed, ... 334
Bostock's analysis of the perspiration, reviewed, . . 333
Brain, chronic disease of, cured by trephining, . . . 422
Bread of bad quality, supposed the cause of an epidemic at Paris, 399
Breschet on a cavity and fluid in the membrana caduca, . 176
Brewster and Skerrett's advertisement of the new vaccine regulation, ... 223
Brodie on injuries of the brain, reviewed, ... 323
Brome, action of the deutobromide of mercury on the animal economy, . . . 219
Bruni on cancer of the uterus cured by injections of hydrocyanic acid, ... 216
Brunner's observations on the acceleration of the pulse in high situations, . . 182
Buttermilk, poisoning by, . 418
Byant's, Dr T. S. case of obstinate constipation successfully treated, 266

Caffrot's case of gangrene of a crural hernia, ... 418
Calculus, alvo-urinary, . 423
obstructing labour, 428
Calomel in gangrene of the throat, 66
Camphor to cure polydipsia, 195
Cancer of the uterus cured by injections of hydrocyanic acid, 216
Caoutchouc blow-pipes, . 432
Capillary circulation, . . 390
Caries of the upper maxilla, with regeneration of the teeth, 213
Cartilages and fibro-cartilages, professor Weber on, . . 177
Cartwright on iodine in various diseases, . . . 199
Case of abscess of the liver opening into the duodenum, 394
a calculus obstructing labour, . . 428
acupuncturation in nervous affections of the eye, by Dr G. B. Quadri, 246
acupuncturation in rheumatism, . . 404
amputation of the lower jaw, . . 208

Case of alvo-urinary calculus, 423
aneurism of the middle meningeal artery, 424
aneurism of the external iliac artery, cured by ligature, . . 206
an ossification in the placenta, . . 428
a preternatural septum in the vagina, retarding labour, . . 426
artificial anus cured by compression and cautery, . . . 208
a uterus bicornis, . 428
cancer uteri cured by injections of hydrocyanic acid, . . 216
cholera infantum, with dissections, . 396
chronic disease of the brain cured by trephining, 428
dissection of a man who hung himself, . 205
effects of mercury in syphilis, . . 269
epilepsy cured by valerian, 200
erysipelas treated by incisions, . . 111
excision of the clavicle, 210
extra-uterine fetation, 216
gangrene of the throat indicating calomel, 66
gangrene of a crural hernia, 418
hernia cerebri, . 214
hydrophobia from cold, 395
imperfect union of a fractured femur cured by extraction of a necrosed portion of the bone, 213
inflamed lymphatics cured by a blister, . 408
inflammation of the tongue accidentally cured, 404
iodine in mammary tumours, . . 198
laceration of the thumb, 418
laryngotomy, . 420
lithotomy by the high operation, . . 423
mania from indigestion, 400
masked intermittent fever, by Dr Richelan, 86
measles confined to one half the body, . 395
medical evidence in a life insurance case, 415
membrane produced in coryza, . . 403
Case of natural delivery after fruitless use of the forceps and efforts to turn, 215
obstinate constipation, 266
paralysis cured by lightning, . . 201
paralysis from lead, with the dissection, . 186
perforation of the stomach, 394
perforation of the stomach of a singular character, 401
peritonitis, . . 278
poisoning by the buttermilk of a goat, . 418
poisoning with carbonate of potash, . . 203
premature labour, the child surviving, . 427
purgation from croton oil absorbed by the hand, 406
regeneration of the teeth, 218
rheumatism cured by tartar emetic, . . 407
retroversion of the uterus, 216
rupture of the stomach by vomiting, . . 335
scrofulous ulcers cured by cod oil, . . 404
secale cornutum administered in various states of labour, . . 153
softening of the stomach, 185, 395
spontaneous salivation cured by masticating cinnamon, . . 412
staphyloraphy, . 209
strangulated hernia, 418
strictured ilium, . 31
synovitis, . . 398
transformation of the tissue of the heart into fat, 402
tumours of the stomach, 110
ulceration of the stomach, 394
unusual variety of aneurism, . . 423
Catarrh, summer, Dr Bostock on, reviewed, . . . 334
Causes which retard perfection in the healing art, by Dr A. Matthey, of Geneva, . . 295
Caustic paste for callosities about fistulas, . . . 195
Cavalier, M., on vital resistance to disease, . . . 187
Caventon's remarks on the test for strychnia, . . . 222
Cavity and fluid in the membrana caduca, . . . 176

Cazenave and Shedel on cutaneous diseases, noticed, . 385
Centre of the nervous system, Flourens on the, . . 183
Cephalo-spinal fluid, Magendie on the, ... 182
Chaussier, professor, biographical notice of, ... 162
Chemical changes in the fluids produced by abstinence, . 220
Cherrattah, the herb, on the medicinal uses of, ... 410
Chevallier, M., on Dr Staples's method of procuring morphia, 222
Chevallier on caoutchouc bags for blow pipes, ... 432
Children, Wolff on peritonitis in, 107
Cholera, Dr Christie of Madras, on, 407
Cholera infantum, morbid appearances in, ... 396
Christie, Dr, on cholera, . . . 407
Christison on an epidemic dysentery at Edinburgh, . . 408
Cinnamon, spontaneous salivation, cured by masticating, . 412
Circular of Dr Atkins for his orthopedic institution, . . 222
Circulation, M. Hering's experiments on the velocity of the, 182
Civiale, M. observations on the operations of, by Dr La Roche, 20, 212
Cod oil in scrofulous ulcers, . 404
Cold air in pulmonary diseases, 199
Colica pictonum, note on, by Dr R. Harlan, ... 299
Colic from lead, Anguetin on, . 400
Collard de Martigny on abstinence, 195
on chemical changes produced in the fluids by abstinence, . . 220
on the functions of the lymphatic system, . . 184
Collyrium siccum for opacity of the cornea, ... 195
Colson on the influence of mercury on the uterus, . . 194
Commencement in the university of Pennsylvania, . . 435
Commencement in Columbian College, D. C. 437
Comparative anatomy of the brain, vol. 2, of M. Serres, reviewed, 336
Comparison of venous blood with that in the capillaries, . 220
Congenital fusion of the kidneys, 176
Connection between monstrosity and the nervous system, . 390
Conrad's, Mr S. W. election as professor of botany, . . 442
Constipation, obstinate case of, successfully treated, . 266
Copaiba, mode of exhibiting, 411
Cornea, collyrium siccum for opacity of the, ... 195
Cotton employed as a dressing for blisters, ... 268
Courhaut on the poisonous effects of ergot, ... 192
Coxalgia, Dr Spitzer on the nature and cure of, . . 62
Cramer, Dr, on spurious cow-pox, 185
Croton oil, purgative when absorbed by the hand, . . 406
Cusack on amputation of the lower jaw, ... 208
Cutaneous diseases, Cazenave and Shedel on, noticed, . . 385
Cutaneous perspiration, Dr Bostock's analysis of, . . 333
Cyanate of ammonia identical with urea, ... 218
Cyanic acid procured in a separate state, . . . 218

Dandelion, proper preparation of, 199
Darrach, Dr W. on the proper use of mercury in syphilis, with cases, ... 269
Darrach's case of strictured ilium, 31
Davy, Dr John, on the introduction of the catheter to relieve strangury, ... 200
Degiorgi's, Dr, recto-vesical operation, ... 213
Delirium tremens, Barkhausen on, reviewed, . 301
cured by opium alone by Dr Wittchke, . 194
Leveillé on, 191
opium in the cure of, . 411
Delormel, Dr, on chronic gastro-enteritis, ... 194
De Sousa Ferras's, Dr M. J. case of mania produced by indigestion, ... 400
Deutobromide of mercury, action of, on the animal economy, . 219
Dewar's, Mr, cases of poisoning by carbonate of potash, . 203
Diamonds, mode of producing artificial, ... 430
Difficult cases of parturition, Michell on, reviewed, . 141

Dissection, preservation of subjects for, . . . 389
Dobson on punctures in erysipelas, reviewed, . . 108
Drake, Dr, of New York, on the respiration of cool air in pulmonary diseases, . . 199
Drake on uterine hemorrhage, 426
D'Outrepont's, professor, remarks on inducing premature labour artificially, . . 428
Drowning, remarks of M. Leroy on excessive insufflation of the lungs after, . . 205
Duges on puerperal peritonitis, 425
Dupuytren's, professor, ointment for discussing tumours, . 195
Dysentery, epidemic, at Edinburgh, . . . 408

Ebermaier's, Dr, singular case of perforation of the stomach without softening, . . 401
Ebers, Dr, on extract of root of male fern in tænia, . . 195
Education, medical, Meigs's oration on, noticed, . . 382
Epps's case of inflamed lymphatics, . . . 408
Effects of abstinence, . . 195
Effects of certain medicines on a healthy individual, . 192
England, difficulties of anatomy, in, . . . 177
Epidemic dysentery at Edinburgh, 408
of a singular character at Paris, . . 399
small pox at Marseilles, M. Robert's account of, noticed, . 379
Epilepsy, case of, cured by valerian, . . . 200
Epilepsy, cured by selinum palustre, ... 414
Ergot, Dr Huston on the abuse of, ... 75
poisonous effects of, . 198
use of, in parturition, by Mr Michell, reviewed, 141
Erysipelas, Dobson on punctures in, . . 108
Hutchinson's case of, 110
Lawrence on, reviewed, . . 94
Esquirol's case of abdominal pregnancy, . . . 424
Examination of the body of a man who hung himself, . . 105

Excision of the clavicle, by Dr Mott, . . . 210
Experiments on the velocity of the circulation, . . 182
External iliac artery tied by Dr Randolph, . . 207
Extirpation of neck of uterus, by M. Lisfranc, . . 14
Extra-uterine fetation, case of, 216
Eye, influence of operations in the neck on the, . . 182
nervous affections of, cured by acupuncturation, . 246
neuralgia of, cured by belladonna, . . 194
peculiar inflammatory disease of, . . . 121

Fahrenhorst's case of superfetation in a single membrane, . 181
False membranes, chemical nature of, . . . 432
Fearn, Dr, on removing atmospheric pressure in making minute preparations, . . 28
Ferramosca's, Dr, case of anthrax cured by mercurial frictions, 201
Fetation, extra-uterine, case of, 216
Fevers, intermittent, Prussian blue for the cure of, . 413
periodical, of Rome, Dr Folchi on the origin of, 251
Fibro-cartilages, Weber on, . 177
Filix mas, extract of root of, in tænia, ... 195
Flourens on the situation of the centre of the nervous system, 183
Fluid in the membrana caduca, 176
Folchi, Dr G. of Rome, on the origin of the periodical fevers of that city, . . . 251
Fractured patella, Dr Bond on the treatment of, . . 286
Frictions, mercurial, in anthrax, 201
Functions of the lymphatic system, . . . 184
Fungus hæmatodes, cured by alum and red oxide of mercury, 418
Fusion of the kidneys, . 176

Gairdner's case of epilepsy cured by valerian, . . 200
Gangrene of a crural hernia, . 419
Gangrene of the throat indicating calomel, . . . 66
Gannal's mode of producing artificial diamonds, . . 430
Gabert's case of a uterus bicornis, 428

Garde's case of extra-uterine fetation, ... 216
Gascoin on preserving anatomical preparations, . . 389
Gastrodynia cured by prussic acid, . . . 200
Gastro-enteritis, Armstrong on, 188
chronic, Delormel on, . 194
Gastro-malacia, case of, . 185
Gay Lussac's new pyrophorus, 431
Glandular swellings, Dupuytren's ointment for, . . 185
Glucinum newly obtained separate, ... 430
Gmelin's process for artificial ultramarine, . . . 217
Græfe's caustic paste for callosities about fistulas, . . 195
Graduates of Transylvania University, ... 441
Guibert's case of membranous inflammation of the Schneiderian membrane, ... 403
Guimier on nitrate of silver in angina maligna, . . . 411
Gumpert on cod oil in scrofulous ulcers, ... 404

Halle ambulatory clinic, annals of, noticed, ... 380
Harlan's note in reply to M. Merat on diseases from lead, . 299
Hasse, Dr, on Prussian blue in intermittents, ... 413
Hazard's, Mr S. abstract of the bills of mortality of Philadelphia, for 1824, . . . 439
Healing art, Dr Matthey, of Geneva, on the causes which retard the perfection of the, . 295
Heart, case in which no division existed between the ventricles of the, ... 180
Heart, great part of a, transformed into fat, ... 402
Heart, wound of, Dr Randall's case, ... 421
Hemorrhage from leech bites, mode of arresting by cups, . 201
Hemorrhage, uterine, checked by injecting cold water through the umbilical cord, . . 215
Hering's experiments on the velocity of the circulation, . 182
Hernia, gangrene of a, . 418
Hernia, strangulated, Dr Ehermann's case of, . . ib.
Horner's cases of cholera infantum, with dissections, . 396
Houlton on preparing leontodon taraxacum, ... 199
Hufeland on scrofula, Meigs's translation of, . . . 386
Huston, Dr, on spurred rye, . 75
Hutchinson's case of erysipelas, 110
Hydrophobia from cold, case of, 375

Iliac artery, external, ligature of, by Dr Randolph, . . . 206
Indigestion, mania produced by, 400
Infantile diseases, Dr Wolff on, noticed, ... 167
Injuries of the brain, Brodie on, reviewed, ... 323
Institute, Philadelphia Medical, 438
Institutes of medicine and medical jurisprudence, Dr Bell's address on, ... 225
Insurance on lives, curious case, 415
Intermittent fever, masked, Dr Richelan's case of, . . 86
Intermittent fever, Prussian blue for the cure of, . . 413
Iodine in mammary tumours, . 198
passage of, into the blood, 432
in various diseases, . 199
in white swellings, . 411
Ith, professor, on nitro-muriatic pediluvia, ... 414
Jacobson, Dr, on perineal hernia, 214
Jemima, M. on injections by the umbilical cord in uterine hemorrhage, ... 215
Jerrard, M. J. C. on hydrocyanic acid in gastrodynia, . . 200
Judkins's, Dr, case of chronic disease of the brain cured by trephining, ... 422
Jurisprudence, medical, and medical institutes, Bell's address on, 225

Katerban's, Dr, case of ossification in the placenta, . . 428
Kidneys, congenital fusion of the, 176
Kitson's, Mr G. case of paralysis from lead, ... 187
Krimer's, Dr, case of aneurism of the middle meningeal artery, . 424
Krimer's, Dr, case of lithotomy by the high operation, . . 423
Krukenberg's, Dr, annals of the ambulatory clinic at Halle, noticed, ... 380

Labour, acceleration of, . 215

Labour obstructed by a calculus in the bladder, . . 428
Laceration of the thumb, case of, 418
Lallemand and Lafosse on tartar emetic in rheumatism, . 407
Lallemand's case of an unusual variety of aneurism, . . 424
La Roche's account of important operations performed in Europe, . . 13, 212
Laryngotomy, case of, . . 420
Lassaigne, on the analysis of false membranes, . 432
on the pineal concretions of the horse, . ib.
Lawrence on erysipelas, reviewed, 94
Leeches, mode of arresting hæmorrhage from their bites, . 421
Leontodon taraxacum, proper mode of gathering and preparing, . . . 199
Leroy on the dangers of violent inflation of the lungs in drowned persons, . . . 205
Leveillé on delirium tremens, . 191
Lightning, cure of paralysis by, 201
Lightning, singular tubes produced by sand, . . . 431
Lisfranc's operation for excision of the uterus, . . 14, 420
Lithontritie, observations on, by Dr La Roche, . . 20
Lithotomy above the pubis, by M. Amussat, . . 25
by Dr Krimer, . 423
by the rectum, . 212
Lombard, Dr H. C. on pulmonary tubercles, . . . 400
Louis on bloodletting, . . 415
Lower jaw, amputation of, . 208
Lymphatic system, functions of, 184
Lymphatics, inflamed, cured by a large blister, . . . 408

Magendie's remarks on the brain and cephalo-spinal fluid, . 184
Magliari's, Dr, case of strangulated hernia, cured by the application of belladonna, . . 199
Male fern, extract of, in tænia, . 195
Mania produced by indigestion, 400
Marseilles, epidemic small pox at, 379
Masked intermittent fever, by Dr P. Richelan, . . . 86
Matthey, Dr, of Geneva, on the causes which retard perfection in the healing art, . . 295
Mayer on the effect upon the eye of operations on the neck, . 182
Mayer on valves in the pulmonary veins, . . . 175
Mayer's account of a monster, ib.
Measles, case of eruption of, confined to one-half of the body, 395
Medical certificates and evidence, curious case, . . . 415
Medical education, Meigs's oration on, noticed, . . . 382
Medical physics, Dr Arnott's work on, reviewed, . . 124
Medical society, spring report of, ... 439
Medicines, effects of certain, on a healthy individual, . . 192
Medico-chirurgical transactions, vol. xiv. reviewed, . 94
vol. xiv. part 2, reviewed, . . . 323
Meigs's oration on medical education, noticed, . . . 382
Meigs's translation of Hufeland on scrofula, noticed, . . 386
Membrana caduca, cavity and fluid in, ... 176
Membranes, false, formed in the Schneiderian membrane in a case of coryza, . . . 403
Meningeal artery, middle, aneurism of, . . . 424
Merat, M. of Paris, Dr Harlan's note in reply to his strictures, 299
Mercury, deutobromide of, action of upon the animal economy, . . . 219
Mercury, Dr Darrach on the proper use of, in syphilis, . . 269
Merrill, Dr, on the use of cotton as a dressing for blisters, . 268
Metalloids, glucinum and yttrium, newly obtained separate, . 430
Michell on ergot, reviewed, 141
Mitivie's case of abdominal pregnancy, . . . 425
M'Kenzie on preserving subjects for dissection, . . 389
Monster, Mayer's account of a, 175
Morphia, Dr Staples's new improved mode of preparing, 433
Morphia, M. Chevallier on Dr Staples's mode of preparing, 222
Morphia, on fermentation of opium previous to the extraction of, 222
Mortality of Philadelphia in 1828, 439
Mott's operation for the extirpation of the clavicle, . 210

Nægele's table of the ratio of singular midwifery cases, . 427

Nancrede's, Dr J. G. vaccine institution, . . . 438
Natural delivery after the fruitless use of the forceps and vain efforts to turn, . . 215
Neck, influence of operations on the, on the nutrition of the eye, 182
Nervous affections of the eye cured by acupuncturation, by Dr Quadri, of Naples, . 246
Nervous system, connection of, with monstrosity, . . 390
Nervous system, M. Flourens on the centre of, . . 183
Neuralgia, cures of, . . 312
Neuralgia of the eye cured by extract of belladonna, . 194
New medical hall, university of Pennsylvania, laying of the corner stone, . . . 436
New metal, . . . 429
Nitrate of silver in angina maligna, 411
Nitrate of silver in small pox and other vesicular and pustular disorders, . . . 410
Nitro-muriatic pediluvia, . 414

Ointment for glandular swellings, by M. Dupuytren, . . 195
Olive, European, its analysis and use in fevers, . . 193
Opacity of the cornea, collyrium siccum for, . . 195
Opium, on the use of, in delirium tremens, . . . 411
Oration, Dr Meigs's, on medical education, noticed, . 382
Orfila's recent experiments on drowning, . . . 202
Orthopedic institution by Dr Dudley Atkins, . . 223
Osann's discovery of the new metal, pluranium, . . 429
Ossification in the placenta, case of, ... 428

Palates, artificial, on the utility of, ... 421
Pallas's, Dr, comparison of venous blood with that of the capillaries, ... 220
Pallas, Dr, on the analysis and febrifuge powers of the olive tree, . . . 193
Paralysis cured by lightning, 201
from lead, with a dissection, . . 186
Paste, caustic, for callous fistulas, 194
Patella, fractured, Bond on the treatment of, . . 286
Pavas, M., on the means of preventing the absorption of poison, 412
Pediluvia, nitro-muriatic, 414
Perfection in the healing art, Dr Matthey, of Geneva, on the causes which have retarded, 295
Perforation of the stomach, 393
Perforation of the stomach, singular case of, without softening, 401
Periodical fevers in Rome, Dr Folchi on the origin of the, 251
Peritonitis, Hodge's cases of, 278
in young children, 167
puerperal, . 425
Perspiration, analysis of, by Dr Bostock, ... 333
Philadelphia Vaccine Institution, 483
Physiology applied to therapeutics, ... 36
Pineal concretions of the horse, 432
Placenta, case of an ossification in the, ... 428
Platina, mode of rendering malleable, ... 429
Pluranium, a new metal, . 429
Poisoning by carbonate of potash, 203
Poisoning by the buttermilk of a goat, ... 418
Poisoning treated by general and local bloodletting, . . 201
Poison, M. Pavas on the means of preventing the absorption of, 412
Polypus of the uterus, case of, 215
Power of resisting disease, . 187
Premature labour, artificial excitement of, ... 428
Premature labour, the child surviving, case of, . . 427
Preparations, anatomical, preservation of, ... 389
Preservation of subjects for dissection, ... 389
Prussian blue for intermitting fevers, ... 413
Pujol, Dr Alexis, his works and doctrines, reviewed, . . 362
Pulmonary tubercles, Dr H. C. Lombard on, ... 400
Pulmonary veins, valves in the, 175
Pulse, acceleration of the, in high situations, . . . 182
Punctures in erysipelas, . . 108
Purulent deposits in the viscera after injuries, . . . 118
Pustular disorders, nitrate of silver in, ... 451

Puerperal peritonitis, . . 425
Pyrophorus, new one, by Gay Lussac, . . . 431

Quadri, Dr, of Naples, his cases of nervous affections of the eye cured by acupuncturation, 246
Quarterly summary, remarks on the, ... 388

Randall's, Dr, case of wound of the heart, . . . 421
Randolph's, Dr, case of aneurism of the external iliac artery cured by ligature, . . . 207
Ratio of uncommon midwifery cases, . . . 425, 427
Recto-vesical operation, . 212
Regeneration of the teeth, . 213
Resistance to disease, . . 187
Respiration of cold air in various diseases, . . 199
Retroversion of the uterus, . 216
Reuss on the capillary circulation, 390
Review of Arnott's elements of physics, . . 124
Barkhausen on delirium tremens, . 301
Medico-chirurgical transactions, vol. xiv. . . 94
Medico-chirurgical transactions, vol. xiv, part 2, . 323
Michell on ergot, 141
Pujol's works, . 362
Serres on the compative anatomy of the nervous system, vol. ii. . . 336
Rheumatism, acupuncturation in, 404
Rheumatism cured by tartar emetic, ... 407
Richardson's case of a preternatural septum in the vagina, . 426
Richelan, Dr P. of Nice, his case of masked intermittent fever, 86
Ridolfo del Tacca, Dr, on arresting the bleeding from leech bites with cups, . . 201, 421
Riecke's, Dr, cure of ununited fracture by an operation, . 213
Robert's history of the epidemic small pox at Marseilles, reviewed, 378
Rome, Dr Folchi on the periodical fevers of, . . . 251
Rose on purulent collections in the viscera after injuries, reviewed, . . . 118
Rupture of the stomach by vomiting, ... 335

Sager's, Dr, case of gastro-malacia, 185
Salivation, spontaneous, cured by masticating cinnamon, . 412
Schmutziger, and others, on selinum palustre in epilepsy, . 414
Schutte's, Dr, case of fungus hæmatodes, ... 418
Scrofula, Meigs's translation of Hufeland on, noticed, . 386
Scrofulous ulcers, Gumpert on cod oil in, . . . 404
Secale cornutum, Dr Huston on poisonous effects of, . . 192
Selinum palustre cures epilepsy, 414
Septum, preternatural, in the vagina, ... 426
Serres, Dr, on the comparative anatomy of the brain, vol. ii. reviewed, . . . 336
Serullas, M., obtains pure cyanic acid, ... 218
Seymour's cases of tumour of the stomach, reviewed, . . 111
Shedel and Cazenave on cutaneous diseases, noticed, . 385
Simeon's case of transformation of the substance of the heart into fat, ... 402
Skerrett and Brewster's, Drs, vaccine notice, ... 223
Small pox, epidemic, at Marseilles, 378
nitrate of silver in, . 410
virus, analysis of, . 432
Smith on opium in delirium tremens, . . . 411
Snell's, Mr J., recommendation of artificial palates, . . 421
Softening of the stomach, case of, 185, 395
Spitzer, Dr M. T., on the nature and cure of coxalgia, . 62
Spurious vaccine pox, Dr Cramer on, ... 185
Staples's, Dr, method of obtaining morphia, comments on by M. Chevallier, ... 222
Staples's, Dr, new improved mode of preparing morphia, &c. . 433
Staphyloraphy, by Dr Warren, of Boston, ... 209
Stomach, case of perforation of 393
without softening, . 401
softening of, . 185, 395
tumours in, . . . 111
case of ulceration in, 394

Strangulated hernia, cured by belladonna, . . . 199
Strangulated hernia, Dr Ehermann's case of, . . 418
Strangury relieved by the catheter, 201
Strictures of the urethra, mode of treating, . . . 422
Strychnia not reddened by nitric acid, ... 222
Subjects, preservation of, for dissection, . . . 389
Superfetation, with a single membrane, . . . 181
Syme's case of amputation of the lower jaw, . . . 208
Synovitis, cases of, . . 398
Syphilis, Dr Darrach on the proper use of mercury in, . . 269

Tænia cured, by extract of male fern, ... 195
Tartar emetic in rheumatism, . 407
Teeth, regeneration of the, . 213
Therapeutics, physiology applied to, ... 36
Threalfall's case of a calculus obstructing labour, . . 428
Thompson's "First Principles" severely attacked by Berzelius, 431
Tiedemann on the connection between monstrosity and the nervous system, . . . 390
Tierney's, Sir Matthew, powder, 201
Tongue, accidental cure of inflammation of, . . . 404
Torpidity of the tortoise, . 392
Transformation of great part of the heart into a mass of fat, . 402
Trephining, chronic disease of brain cured by, . . 422
Transylvania university . 441
Tubercles, pulmonary, Dr H. C. Lombard on, . . 400
Tubes of sand produced by lightning, . . . 431
Tumours of the stomach, . 111
Tummermann's process for preparing amylic acid, . . 431

Ulceration, case of, in the stomach, 394
Ultramarine, artificial, . 217
Urea, a cyanate of ammonia, . 218
Urethra, mode of treating strictures of, . . . 422
Uterine functions, effect of mercury on the, . . . 194
Uterine hemorrhage, Drake on, 426
cured by injections through the umbilical cord, 215
Uterine polypus, . . . 215
Uterus, cancer of, cured by injections of hydrocyanic acid, . 216
Uterus, extirpation of neck of, by M. Lisfranc, . . 14, 420
Uterus bicornis in the human subject, ... 428
Uterus, retroversion of, . 216

Vaccine regulation in Philadelphia, ... 223
Vaccine, spurious, Cramer on, . 185
Vagina, preternatural septum in, 426
Valerian, cure of epilepsy by, . 200
Valsalva's method, aneurism cured by 418
Valves in the pulmonary veins, . 175
Varioloid disease at Marseilles, . 378
Velocity of the circulation, experiments on the, . . 182
Venereal, Dr Darrach on the proper use of mercury in the, 269
Venous blood, comparison of, with that of the capillaries, . 220
Ventricles of the heart, case in which no division existed between the, . . 180
Vernier's, Dr, experiments and observations on general and local bloodletting in cases of poisoning, 201
Vesicular disorders, nitrate of silver in, . . . 410
Vital resistance to disease, 186

Wallace on a peculiar inflammatory disease of the eye, . 121
Walton's, Dr, case of abscess in the liver and perforation of the stomach, . . . 393
Walton's, Dr, case of ulceration of the stomach, . . 394
Warren's, Dr, operation for staphyloraphy, . . . 209
Weber, professor, on the cartilages and fibro-cartilages, . 177
White swellings cured by iodine, 411
Wittchke's, Dr, cases of delirium tremens, . . . 194
Wöhler, Dr, discovers urea to be a cyanate of ammonia, . 218
Wöhler, Dr, obtains glucinum and yttrium separate, . . 430
Wolff on peritonitis in young children, reviewed, . . 167
Wollaston, Dr, death of, . 442
Wound of the heart, Dr Randall's case of, . . . 421

Yttrium newly obtained separate, 430